

UH H698n 1889

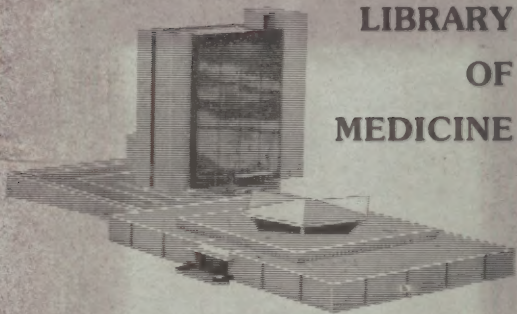
62511000R



NLM 05099189 0

NATIONAL LIBRARY OF MEDICINE

**U.S. NATIONAL
LIBRARY
OF
MEDICINE**



**RETURN TO
NATIONAL LIBRARY OF MEDICINE
BEFORE LAST DATE SHOWN**

MAY 23 1984

al

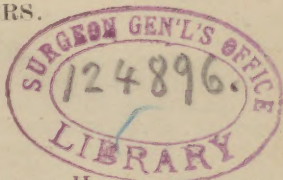
NOTES
ON
BEARER DRILL

WITH
HAND-LITTER, AMBULANCE-
WAGON, etc.

SUPPLEMENTARY TO
A PROVISIONAL MANUAL OF
INSTRUCTION

FOR THE
HOSPITAL CORPS, U. S. A., AND COMPANY
BEARERS.

BY



JOHN VAN RENSSELAER HOFF,
CAPTAIN MED'. DEP'T.,
U. S. ARMY.

UH

H698n

1889

Film no. 90-30#4

Copyright, 1889.

PREFACE.

In preparing the following notes the author was actuated by a desire to embody the principles laid down in "A Provisional Manual" etc, in a definite tactical form.

Nearly a year's practical experience with our own Hospital Corps, and observation of methods pursued in foreign armies, have taught him that the "go as you please" system is of as little use in the training of a sanitary soldier, as of a soldier of the line. Uniformity of drill can only be attained by absolute exactitude of instruction, each motion and movement must be clearly defined, and executed in only one way, until a better has been authoritatively determined upon. It goes without saying that the constant and unvarying performance of drill produces an aptitude of execution which can be acquired in no other way. "The Provisional Manual," and these notes, afford but a glance at the broad field of bearer company tactics with which the sanitary soldier must become familiar; they however, establish the principle, and give it definite form, upon which all evolutions in bearer tactics may be based and from which, with the conjoint experience of the Medical Department, will ultimately be evolved a perfect Manual of Instruction for the Hospital Corps of the U. S. A.

It may be said that the bearer drill tactics herein set forth shows too minute a subdivision of motions and movements, and a too prolix description thereof. The author's effort to make clear the principles upon which these tactics are based, and their application to particular movements, must be his apology for any departure from the standard he has sought to reach. We of the Medical Corps have many new, unfamiliar, but none the less important problems to solve in our relations to the Hospital Corps. If these notes, the outcome of several months of unremitting work with the corps detachment and company bearers at this station, aid at all in the solution of these problems, the work and its results are justified.

FORT RENO, I. T.

MAY 1888.

It will be observed that the drill regulations for formation, and inspection, of a detachment of the Hospital Corps herein set forth, are substantially those laid down in the Provisional Manual, the identical language of which is of the prescribed tactics for the U. S. Army, of orders and decisions on points in tactics, A. G. O., being so far as possible used. Certain points, the author believes, have been made clearer.

The question of the advisability of a double rank formation, instead of the single rank, is one that experience alone can settle. A single rank has practically become the custom of our service, hence a single rank for bearer detachment formation. In armies of larger proportions, the double rank prevails, consequently the bearer manuals of European armies provide for a double rank. The fact that a squad at-litter-posts, covers quite as much ground as it would in line, is a strong argument in favor of the single rank. As far as the practical application of these tactics is concerned it is immaterial which formation is used.

Bearer drill should never be conducted in an informal manner, officers and men should always appear in prescribed uniform, with gloves, and side arms, (the men may remove their gloves, after the squads have been numbered). It is of the utmost importance, in the interest of discipline and consequent efficiency, that the men of the Hospital Corps should never forget the fact that they are soldiers.

In conclusion, these notes, which embrace the substance of a report to the Surgeon General, U. S. A., and are published by his permission, are presented for the consideration of medical officers of the regular establishment, and national guard, interested in this branch of army sanitation with the hope that the bearer drill may, by them, be subjected to thorough trial, and critical examination; and to the assurance, that any suggestion in the direction of improvement (for which there is much room) will be gratefully received by

THE AUTHOR.

PART I.

FORMATION OF THE DETACHMENT.

1. The detachment is formed in single rank, privates of the Hospital Corps on the right, company bearers, without arms, in the center, and musicians on the left.

POSTS OF HOSPITAL STEWARDS.

2. The Senior Hospital Steward is on the right of the line; the Junior Hospital Stewards and Acting Hospital Stewards are in the line of file-closers in order of seniority from right to left. The file-closers are posted two yards in rear of the line, and are as equally distributed along it as possible.

TO FORM THE DETACHMENT.

3. The Senior Hospital Steward, facing the detachment and six yards in front of its center, commands:

FALL IN,

at which the men form in single rank facing to the right. The Steward then commands:

1. Left, 2. FACE.

and then calls the roll. He then commands:

1. Count, 2. FOURS.

After the fours are counted, if the knapsack or medicine-case men are not already in that place, they are assigned as No. 4 of each set. The sets of fours are designated as squads, and are numbered from right to left, [at the command: 1. Number, 2. Squads, upon which the Nos. 1 call out 1. 2. 3. etc.] The numbers thus assigned to the squads are permanent and do not change during the exercises. The detachment being formed, the Senior Hospital Steward places himself six yards in front of the center of the detachment, facing to the front, salutes the officer in charge, reports the result of the roll-call, and then takes his place on the right of the detachment.

4. The left squad, if incomplete, may remain in line on the left, and its men be utilized as "dummy" wounded; or they may be assigned as supernumeraries and posted in

the line of file-closers behind the squads to which they are attached. Supernumeraries are attached to squads whenever the duty to be performed promises to be so fatiguing as to require more than the usual reliefs.

TO OPEN RANKS.

5. The detachment being in line at a halt, the Senior Hospital Steward on the right, the instructor commands:

1. Rear open order, 2. MARCH, 3. FRONT.

At the first command, the Senior Hospital Steward steps briskly three yards to the rear to mark the new alignment of the file-closers. At the command *march*, the front-rank men dress to the right, the file-closers step to the rear and align themselves on the Senior Hospital Steward.

The instructor superintends the alignment of the front rank and the Senior Hospital Steward that of the file-closers. The instructor verifies the alignment of the file-closers. The file-closers cast their eyes to the front as soon as their alignment is verified. At the command *front*, the Senior Hospital Steward resumes his place in the front rank, and the men cast their eyes to the front.

TO CLOSE RANKS.

6. The instructor commands:

1. Close order, 2. MARCH.

At the command *march*, the file-closers close to two yards.

TO MANEUVER THE DETACHMENT.

7. The necessary maneuvers to conduct the detachment or separate squads or groups of squads to and from the place of instruction or duty are confined to the simplest movements, and are executed by the commands and means prescribed in the authorized infantry tactics, and in the commands for this purpose the squads are designated as fours. In long marches the commander may, in his discretion, direct the nearest file-closer to act as guide, and conduct the head of the column, when the original left flank of the detachment is in front. If the original left squad is incomplete when the detachment is in column of fours, it preserves the proper distance for forming line.

INSPECTION OF A DETACHMENT.

8. The detachment being in line at a halt, the instructor

commands:

1. Draw. 2. SWORDS (or Knives).

9. At the command *draw*, (1) grasp the scabbard with the left hand, bring the hilt a little forward, seize the gripe with the right hand and draw the blade two inches out, pressing scabbard against thigh with left hand. At the command *sword*, (2) draw the sword (or knife) quickly, raising the arm to its full extent at an angle of about 45°, the sword (or knife) in a straight line with the arm, and make a slight pause; (3) drop the left hand to side, at the same time bring the back of the blade of sword against the hollow of the right shoulder, the blade vertical, arm nearly extended, the left side of the gripe with the thumb against the thigh, the little finger on the back of the gripe; this is the position of carry sword. At 3rd motion, with knife, drop left hand to side, bring knife to right side, arm extended naturally, back of blade to front, point slightly advanced. This is the position of carry knife, and will be taken at command *carry sword*.

He then commands:

1. Rear open order. 2. MARCH. 3. FRONT. (*par. 5.*)

10. 1. Inspection, 2. ARMS.

and minutely inspects the arms, accouterments and dress of each soldier. As he approaches the right of the line the first two men bring their swords or knives vertically to the front, raising the hand as high as the neck and six inches in front of it, edge to the left, the thumb extended on the back of the gripe, little finger by the side of the others; (2) each successively turns the wrist outward to show the other side of the blade, the edge to the right, makes a slight pause, then turns the wrist back, and as the instructor passes (3) resumes the carry. The first two men execute the first motion of inspection sword; the first man, as the instructor comes in front of him, executes the second motion of inspection sword, the second man, as the instructor comes in front of him, executes the second motion, the first man at this instant executing the third, and the third man the first, and so on successively.

11. The instructor then commands:

1. Return. 2. SWORDS (or knives).

At command *return*, (1) take the first position of inspection arms; at command *swords*, (2) carry the right hand opposite and six inches from the left shoulder, lower the blade and pass it across and along the left arm, the point

to the rear, turn the head slightly to the left, fixing the eyes on the opening of the scabbard and insert the point of the blade in the scabbard; (3) return the blade, turn the head to front, and drop the right hand to side.

12. He then commands:

1. Unslung, 2. KNAPSACKS, 3. Open, 4. KNAPSACKS.

At these commands, the men equipped with knapsacks and medicine-cases unslung them and prepare them for inspection as nearly as practicable as follows:

At the command *unslung*, (1) each man makes a half face to the right and if equipped with a knapsack unfastens the hook of the right strap by seizing the D ring with the thumb and fore-finger of the left hand passed under the knapsack: he then unhooks the strap with the right hand and unslings the knapsack by passing the right fore-arm over the head: at the same time he faces to the front and, standing erect, holds it by the straps in front of his knees: at the command *knapsacks*, (2) he places the knapsack on the ground against the toes, the straps underneath, and then stands at attention: at the fourth command he opens the knapsack, turning the flap from him, and stands at attention. If equipped with a medicine-case, which is to be suspended on the back by a shoulder strap passing over right shoulder and secured to the body by a waist strap, at the command *unslung*, (1) each man makes a half face to the right, loosens the waist strap, brings the medicine-case to the front of the left hip by passing it under the left arm, and faces to the front: at the command *knapsacks*, (2) he stands at attention: at the command *open*, (3) he unbuckles the case strap, and at fourth command, *knapsacks*, throws back the cover, raises the partition cover holding it vertical between thumb and index finger of left hand, and stands at attention.

13. 1. Repack, 2. KNAPSACKS.

At command *knapsacks*, each knapsack is packed, fastened up, and left on the ground in the same position as before opening, each medicine case is closed and strapped.

14. 1. Sling, 2. KNAPSACKS.

At the command *sling*, (1) each man equipped with a knapsack grasps the unhooked (right) strap with the right hand, the hooked left strap with the left hand, the back of the left hand to the right, raises the knapsack and, standing erect, makes a half face to the right: at the command *knapsacks*, (2) he swings the knapsack over the shoulders,

passing the left arm through the hooked strap, and carrying the right hand strap over the head; he then brings this strap down over the right shoulder, makes a half face to the left, and hooks the strap with the right hand, holding the D ring with the thumb and fore-finger of the left hand passed under the knapsack. At the command *sling*, (1) each man equipped with a medicine-case makes a half face to the right in time with those equipped with knapsacks; at the command *knapsacks*, (2) he brings the medicine-case to his back by passing it under the left arm, makes a half face left in time with the others, tightens the waist strap about his waist, and *all stand at attention*.

15. A packet containing "first aid" dressings should form part of the equipment of, at least, every sanitary soldier; it may usually be carried in a right "hip" pocket, and its presence verified at inspections.

1. Inspection, 2. PACKETS.

At the command *inspection*, (1) carry the right hand back to the right hip and grasp the packet between the thumb and fore-finger: at the command *packets*, (2) bring the packet to the front, fore-arm at a right angle to arm, elbow at side. When the inspector has passed, the packets are to be returned without further orders.

The inspection completed ranks are closed.

The inspection of a detachment armed with rifles or carbines, so far as the arms are concerned, is conducted as prescribed in the U. S. Infantry or Cavalry Tactics.

15. a. INSPECTION AND MUSTER OF A DETACHMENT.

The detachment being in line at a halt, swords and knives at carry sword; as the inspector approaches he is saluted by the detachment commander only (the detachment does not present arms). The inspector, if he desires to inspect, simply acknowledges the salute, and then says, Prepare your detachment for inspection. If he desires to muster the detachment in addition, he says, Prepare your detachment for inspection and muster. The detachment commander then faces about, gives the commands:

1. Rear open order. 2. MARCH. 3. FRONT. (*Par. 5.*)

1. Inspection, 2. ARMS, (*Par. 10.*)

and assumes his position three yards in front of the right file.

The inspection is conducted on the principles prescribed in U. S. Infantry Tactics, pages 358, 359, 360. If muster follows the inspection, the command, Attention to muster,

is given as soon as the inspection is finished.

The inspection and muster finished, the detachment commander closes the ranks, and directs the senior N. C. officer to dismiss the detachment and, if desired, prepare the hospital for inspection.

The N. C. O. then commands:

1. Return, 2. SWORDS (or knives). (*Par. 11.*)

1. Break ranks, 2. MARCH.

COMMAND.

15. *b.* In the absence of a higher authority, No. 1 of a litter squad commands his squad; in his absence No. 4, and both Nos. 1 and 4 being absent, No. 3 commands.

PART II.

16. BEARER DRILL WITH HAND LITTER.

The regulation hand (Halstead) litter of the Medical Department, U. S. A., is of the following average dimensions:

Length of poles, 8 feet.

Length of canvas, 5 feet 10 inches.

Width, 23 1-2 inches.

Hight, 14 3-4 inches.

Its average weight, complete, is 25 lbs., divided as follows:

2 Poles (ash), 12 1-2 lbs.

4 Legs (maple), 3 lbs.

2 Traverse irons, 5 lbs.

Canvas and screws, 2 1-2 lbs.

2 Slings and straps, 2 lbs.

The chief drawbacks to this litter, except that of weight, are remediable. The traverse irons and legs are constantly out of order simply because they are not properly secured; substitute for them the patterns of irons and legs used in the Otis (ambulance) litter, and we will obtain at least a serviceable apparatus, and one constituted on right principles. The question of weight is of the utmost importance, and thus far has not been solved. No hand-litter should weigh more than ten pounds; the other essentials, of course after adaptability, are strength, portability, and convenience in handling. Strong and durable camp bedsteads are now made, weighing but a few pounds, and it is reasonable to assume that hand-litters with metal frames, possibly made from aluminium or some of its cheaper alloys, light and strong, will soon be introduced.

The Otis (ambulance) litter weighs complete, without slings, 20 lbs; its poles and canvas, of equal length, measure 6 feet; its width is 22 inches, and hight 8 inches. The handles and legs fit into grooves in the poles, the former when extended, reaching 6 inches beyond the ends thereof. The Otis litter was evidently intended to meet every possible indication for a hand-litter under all conditions of service, (see report of a Board of Officers on ambulance wagons 1878) but it is necessary to add that its doing so is problematical. The fittings of this litter are in every respect admirable, but in the author's opinion, it will not

prove a practicable field litter for bearer work the handles being neither long nor strong enough.

The Saterlee litter issued to companies to be used by company bearers in emergencies is obsolete, its dimensions are as follows:

Length of poles, 8 feet 10 inches.

Length of canvas, 5 feet 3 inches.

Width, 28 inches.

Hight, 11 3-4 inches.

Weight, complete, 25 1-2 lbs.

From the foregoing it will be observed that three different patterns of litters are issued. The field litters will not fit the ambulance wagon, and the ambulance litter cannot be satisfactorily used for field work, consequently there must frequently be an additional transfer of wounded from field to ambulance litter which entails increased risk to patient, and work to bearers. Multiplication of patterns of apparatus used for the same purposes cannot but be disadvantageous, and certainly should be avoided if possible.

NOTE.—

The Faris stretcher used in the British service is fitted with wheels instead of legs. After careful trial the author is unable to see any advantage this litter offers over a properly constructed Halstead, while its weight condemns it.

The weight and dimensions of the Faris stretcher are as follows—viz:

Length of canvas, 6 feet.

Length of poles, 7 feet 9 inches.

Width, 1 foot 11 inches.

Hight, 5 7-8 inches.

Weight, 32 lbs.

The old pattern English stretcher is without legs or wheels and has nothing to commend it, except its weight 16 pounds.

The litter-slugs (shoulder braces) used in this drill are of the pattern recommended by the author to the Surgeon General, U. S. A. They are of black leather 1-16 inch thick, 2 1-2 inches wide, in two pieces, one 50 inches long (5 1-2 inches turned up for loop, and 1 1-2 inches for buckle) the other, 26 1-2 inches long, (5 1-2 inches turned up for loop) is punched with holes, and fits into a buckle attached to the longer piece. Through loop of short piece passes a strap (24 by 3-4 inches) used to secure the folded litter and slugs together. The slugs are laid parallel to each other along the top of the folded canvas.

17. All movements in bearer drill are made at the rate of 120 paces to the minute, unless otherwise directed.

18. Detachment being in line, preparatory to litter drill, is brought to "parade rest" (U. S. Infantry Tactics, par. 21) by the instructor, who then commands, (this movement may be executed by any member of the squad designated by number):

1. Nos. 1, 2. ATTENTION.

19. 1. (Nos. 1) File on, 2. LITTER.

1. Right (or left), 2. FACE.

1. Forward, 2. MARCH.

The command, *Right (or left) face*, is determined by the direction of the place where the litters may chance to be. This movement, after the command *file on litter* is executed, will be conducted by the senior N. C. O. in line, if any is present, if not, by No. 1 of the right squad, and will be made in single file.

Nos. 1, at the command *file on litter*, advance left obliquely two yards to front and center of their respective squads, halt, (in position front march par. 41) and, if necessary, are faced right, or left.

At the command *forward, march*, they advance in the determined direction and, passing to the left, each, on reaching center of closed litter, (1) stoops without changing direction, (if litter is awry its long axis is to be placed by its bearer in direction of his march) grasps litter at its center, brings it to right shoulder, (par. 27) and continues the march. Rear files preserve intervals, marking time if necessary, or the front file having covered a sufficient space beyond litter dépôt to permit of all Nos. 1 closing in (with litters) on him to facing distance, may be directed to mark time until all the Nos. 1 have their litters at right shoulder, and are closed; when the movement may be continued by opening files to proper interval, and marching them to posts.

If litter is not lying on the ground, but in any other position, except in stack, so many motions are executed as are necessary to bring it to the right shoulder, when movement proceeds as described.

After litters are at right shoulder, the Nos. 1 are brought by the simplest military maneuver opposite the centers of, and facing their respective squads, and, at two yards distance therefrom, are halted.

1. (Nos. 1,) 2. HALT.

20. 1. (Nos. 1.) Ground. 2. LITTER.

[From right-shoulder-litter.]

At the command *ground*, (1) grasp litter, left hand above right, and bring it vertical; at *litter*, (2) lower litter to the horizontal by turning front handles under right arm, grasp upper pole with right hand at center, drop left hand to side; (3) stoop and place litter gently on the ground, handles toward squad, canvas up; (4) stand erect, facing squad.

21. 1. Nos. 1, 2. POSTS.

Being nearly opposite their proper position in line, Nos. 1, (1) advance obliquely left (guide left) halt immediately upon reaching rear of their respective squads, (2) and face right about into place.

MANUAL OF THE FOLDED LITTER.

With one bearer.

22. The normal position of folded litter in these exercises is at right-shoulder, and in the execution of all motions with it, the folded litter is *invariably* brought *vertical* at the *shoulder*, *one pole in front of other*, *canvas outside*, (inside at left shoulder) left hand above right, left elbow extended, and on a level with the chin.

23. 1. Order, 2. LITTER.

[From right-shoulder-litter.]

At the command *order*, (1) litter is brought vertical at right shoulder; at command *litter*, (2) it is dropped vertically to ground, front handles outside right foot; (3) left hand is dropped to side.

24. 1. Parade, 2. REST.

[From order-litter.]

At command *rest*, (1) carry litter in front of body without moving lower front handle from ground, turning canvas to front, right hand on level with elbow, grasping right pole, left hand just above right, grasping left pole; (2) carry right foot straight to rear 6 inches, left knee slightly bent.

25. 1. Squad, (or Detachment.) 2. ATTENTION.

Resume position of order-litter.

26. 1. Right shoulder, 2. LITTER.

[From order-litter.]

At command *right-shoulder*, (1) grasp front pole with both hands, left hand four inches below level of right shoulder, right hand eighteen inches below left, right arm outside of litter; at command *litter*, (2) raise litter vertically

till extended left elbow comes to level of chin; (3) slope on right shoulder; (4) drop left hand to side.

1. Right shoulder. 2. LITTER.

[From fold-litter. Par. 67, and
[from ambulance] take-litter. Par. 74. } See par. 68.

27. 1. Right shoulder. 2. LITTER.

[From ground-litter.]

At command *right-shoulder*, (1) stoop, grasp litter at its center, right hand under far side, left hand under near side in front of right hand, one pole above the other, canvas out; at command *litter*, (2) rise erect, litter horizontal at right side, arms extended; (3) raise litter vertical to front of right shoulder, (by rotating long axis through arc of 90°); (4) slope it on right shoulder; (5) drop left hand to side.

28. 1. Right-shoulder. 2. LITTER.

[From left-shoulder-litter.]

At command *right-shoulder*, (1) grasp front pole with right hand immediately below left, and slip left hand up pole to level of chin; at command *litter*, (2) the litter is brought vertical at left shoulder, canvas in; (3) pass litter vertical across body to right shoulder; (4) slope on right shoulder; (5) drop left hand to side.

29. 1. Left-shoulder. 2. LITTER.

[From right-shoulder-litter.]

At the command *left-shoulder*, (1) litter is brought vertical to the right shoulder, as described; at command *litter*, (2) pass litter, vertical, across body to left shoulder, and drop elbow to side; (3) slope on left shoulder (canvas in); (4) bring left hand immediately below right; (5) drop right hand to side.

30. 1. Stack. 2. LITTERS.

[From order-litter.]

The Nos. 1. being closed on the right (par. 41), or left. At the command *stack*, (1) litters are brought vertical to right shoulder; at command *litters*, (2) Nos. 1. of the 1st and 3rd squads advance two paces, and lock upper handles of their litters together, inclining them somewhat backward; (3) No. 1. of 2nd squad locks upper handles of his litter between those of Nos. 1. of 1st and 3rd squads; (4) all lower stack to ground, spreading foot of stack sufficiently to make it stand securely; (5) all resume places in line. Nos. 1. of 1st and 3rd squads stepping backward.

31. 1. Lay on loose. 2. LITTERS.

At the command *litters*, (1) the loose litters, (not to exceed two in number) being vertical at right shoulder, are passed vertical from hands to hands till No. 1. of 1st squad receives the first loose litter, and No. 1. of 3rd squad receives the second loose litter (if any), when they, (2) place them on the stack and resume positions.

32. 1. Take. 2. LITTERS.

At command *take*, (1) Nos. 1. of the 1st and 3rd squads grasp loose litters by under pole, with both hands, left above right, and bring them, canvas out, vertical to right shoulder; at command *litters*, (2) pass litters from hands to hands, vertical, till their proper bearers are reached, who bring their litters vertical to right shoulder; (3) Nos. 1. of 1st and 3rd squads advance two paces to their respective litters; (4) Nos. 1. of 1st, 2nd, and 3rd squads all grasp litters, as above described, and breaking stack, bring them vertical to right shoulder; (5) Nos. 1. of 1st and 3rd squads step backward into line; (6) all bring litters to an order.

The manual of the folded litter is introduced for two purposes. 1st. to render the sanitary soldier perfectly familiar with the apparatus he works with, 2nd. as a sort of setting up drill, for which it answers admirably. It is not, however, practicable unless the litter be secured with straps.

33. TO MANEUVER WITH FOLDED LITTER.

Litter squads being in line, Nos. 1 may be ordered directly to posts. (par. 21) after receiving litters, instead of grounding them in front of their respective squads.

If necessary, when direction of march, or face is changed, the litter may be brought vertical to right shoulder to avoid striking a neighboring bearer. The execution of this motion has been described under manual of the folded litter, with one bearer, (par. 22). When turning movement is completed, the litter is either restored to its original position, or in marching by a flank movement, which brings No. 1 in front, or rear of his squad, in other words, in column of files, he brings litter horizontal at right side, as described, thereupon rear (or front) bearers assist in passing litter along (one hand under far side, other under near side) until upper handle is grasped by No. 4 (or in

his absence by No. 3 etc.) when No. 1 also grasps upper handle, and the march proceeds.

If the formation is changed from column of files to any other, at preparatory command, litter is passed to No. 1, Nos. 2 and 3 assisting, as above, and when he has grasped it at center, he brings it vertical to right shoulder, and upon completion of movement, slopes it on right shoulder. e. g.

Bearer squads being in line. Nos. 1 at posts, in line, with litters at right shoulder:

1. Fours left, 2. MARCH.

1. HALT.

1. Right, 2. FACE.

Upon execution of the last movement No. 1 brings litter horizontal, and it is passed to No. 4 as described.

1. Right, 2. FACE.

At command *right*, (1) all pass litter to No. 1, in manner described, who grasps it at center, and brings it vertical to right shoulder; at command *face*, (2) all face right, and upon completion of movement, No. 1 slopes litter on right shoulder.

34. 1. With folded litter, 2. Form, 3. RANK.

This movement is executed from position at litter posts. (par. 43.)

At command *with folded litter*, (1) No. 1 side steps one foot to rear of right center of litter; (2) stoops left, grasps litter, right hand near side, left hand far side of right pole, in front of right hand, litter in this motion being turned up on right pole; (3) stands erect, litter horizontal at left side, arms extended; (4) brings litter vertical to right shoulder; at command *form*, (5) he side steps into position, slopes litter on right shoulder, and drops left hand to side; at command *rank*, (6) movement is completed as described in par. 69.

35. 1. Lower (folded), 2. LITTER.

[When in column of files.]

(1) Nos. 1 and 4, (or, in latter's absence, No. 3), stoop and lower litter gently to ground, where it is placed, canvas up; (2) stand erect.

36. When in position at litter-posts, (par. 43), same as above, Nos. 2 and 3 executing motion.

37. When in position, fold-litter, (par. 67), at command *litter*, (1) Nos. 1 and 4 stoop and place litter on the

ground: (2) stand erect: (3) all bearers face in direction of foot of litter: (4) Nos. 1 and 4 side step to posts.

38. 1. Lift (folded), 2. LITTER.

If litter, being lowered, lies parallel to front of squad in line, which position is reached by lowering litter, when in column of files, and then facing squad right: at command *litter*, (1) Nos. 1 and 4 stoop front, grasp near handles of litter: (2) rise erect, arms extended: (3) Nos. 2 and 3 assist in passing litter to No. 1, (by grasping upper pole with both hands, and sliding litter through hands) until its center has reached No. 1, when (4) he brings litter vertical to right shoulder in manner described, (5) slopes it on right shoulder, (6) drops left hand to side.

39. 1. Lift (folded), 2. LITTER.
[When in column of files.]

At command *litter*, (1) Nos. 1 and 4 (or No. 3 in absence of No. 4) stoop and grasp near handles of litter: (2) stand erect, arms extended.

40. 1. Lift (folded), 2. LITTER.
When in position at-litter-posts, (par. 43).

At command *litter*, (1) Nos. 2 and 3 stoop, grasp right handles of litter: (2) stand erect, arms extended.

41. 1. Nos. 1, front, 2. MARCH.

Squad being in line, No. 1 on right, with litter at right shoulder.

The object of this movement is to place litter in position to permit of the execution of the movement, at-litter-posts (par. 43) or when it is desired to stack litters (par. 30) or, to have them returned to dépôt after drill, etc.

At command *march*, (1) the Nos. 1 advance left obliquely two yards in front of center of their respective squads, and halt, facing in the same direction as their squads.

If now it is desired to place litters in position for the execution of the movement at-litter-posts (par. 43), the commands would be as follows—viz:

1. Nos. 1 about, 2. FACE.

1. (Nos. 1) Ground, 2. LITTER.

1. Nos. 1, 2. POSTS.

If it is desired simply to carry litters to their place of deposit, the Nos. 1 having halted in front of their respective squads, should be faced in direction of proposed march, and then marched to litter dépôt: exactly the reverse of movement described in par. 19.

If it is desired to bring the Nos. 1 in close order, from position front-march, the command right (or left)-close-files-march (see U. S. Infantry tactics, par. 123) should be given. This position would be assumed when litters are to be stacked; and the Nos. 1 could be returned to the position of front-march, by the command, to-two-yards-interval, left (or right)-open-files-march (par. 122, U. S. Infantry tactics).

The Nos. 1 having returned to their places in line, are brought to parade-rest, if the line be in that position, when the command is now given.

1. Squad (or Detachment). 2. ATTENTION.

Let it here be stated that, when motions and movements are not specifically described, they are to be executed as laid down in the U. S. Infantry tactics.

TO MANEUVER WITH OPEN LITTER.

42. It will be observed that the key to all movements with the open litter, is the position assumed by bearers at command, *at-litter-posts* (par. 43). Every movement proceeds from, or returns to this position. If now each bearer has clearly fixed in his mind his number, and the relation of that number to the open litter, confusion will never result, for no matter what position the squads may be in, no matter how disarranged, at the command *at-litter-posts*, each bearer immediately assumes his proper position, which never varies. To be sure there is a military way, and an unmilitary way of accomplishing this, but the result is always the same.

NOTE.

The parts of certain commands, throughout these notes, included in brackets, are simply explanatory, and are not to be used in giving the command, e. g. 1. Lower (folded), 2. LITTER. (par. 35), the command is lower-litter.

43. 1. At litter, 2. POSTS. [From in line.]

(1) All advance in line till rear handles of litter are reached, when Nos. 1 and 2 pass by the right, No. 1 to right center, one yard right of litter, No. 2 to front (foot) of litter, toes on line with ends of handles: Nos. 3 and 4 pass by the left, No. 3 to rear (head) of litter, heels on line

with ends of rear handles, No. 4 to left center, one yard left of litter; (2) all halt on reaching positions without command.



44. 1. At litter, 2. POSTS.

[When in column of files, litter right of bearers, par. 35.]

At command *posts*, (1) all bearers step into position, No. 1 over litter obliquely right and backward, No. 2 over litter obliquely right and forward, No. 3 directly backward, No. 4 obliquely left and forward. (with litter to left of bearers, No. 3 and 4 side step over litter, etc.)

45. 1. At litter, 2. POSTS.

[From form-rank, par. 69.]

At command *posts*, (1) all bearers step backward into position, No. 1 to right center, No. 2 right front, No. 3 left rear, No. 4 left center.

46. 1. Open, 2. LITTER.

(1) All face litter, (Nos. 1 and 2 face left, 3 and 4 right); (2) Nos. 1 and 4 advance to litter, stoop, grasp litter at center, hands under poles (palms up) and separated two feet; (3) rise erect, arms extended; (4) Nos. 2 and 3 unbuckle straps, secure each in near loop of sling, straighten traverse irons, open legs, place slings transversely across litter, as near ends as convenient, center of slings being at center of litter (at its ends); (5) Nos. 1 and 4 lower litter to ground; (6) stand erect; (7) all face foot of litter; (8) Nos. 1 and 4 side step right and left into position, bringing squad into position of at-litter-posts (par. 43).



47. 1. Prepare to lift, 2. LITTER.

(1) Nos. 2 and 3 side step between front and rear handles, respectively; (2) stoop and grasp slings with right hands, at center, between thumb and fore-finger, place them over shoulders, No. 2 buckle right, No. 3 buckle left; (3) slip

loops over handles, beginning with the left, and grasp handles.



48. 1. Lift (open). 2. LITTER.

(1) Nos. 2 and 3 (being in last position of prepare-to-lift litter, par. 47) rise slowly erect; (2) No. 1 advances to side of No. 2, and No. 4 steps right obliquely backward to side of No. 3, adjust slings, lengthening or shortening, if necessary to level litter, and observe that every thing is right; (3) No. 1 steps right obliquely backward, and No. 4 left obliquely forward to center of litter and, one yard distant from side thereof, halt.



49. 1. Lower (open). 2. LITTER.

(1) Nos. 2 and 3 slowly lower litter to ground, release slings from handles; (2) rise erect, remove slings from shoulders, by grasping them at the middle, between thumb and fore-finger of right hands, and lifting them over head; (3) stoop, slip left loops on to left handles of litter, and throw free doubled ends of slings over right handles; (4) rise erect; (5) Nos. 2 and 3 side step over handles, into position (No. 2 right, No. 3 left).



METHOD OF LIFTING AND LOWERING PATIENT WITH THREE BEARERS.

Litter squad having been marched to wounded, so as to,

if possible, bring foot of litter to his head, in a line with the long axis of his body, bearers facing toward patient, it is lowered two yards distant from patient's head, in manner described in lower-litter (par. 49).

50. 1. Prepare to lift. 2. PATIENT.

(1) No. 2 advances right, to middle of patient, No. 4 left, to patient's knee, No. 3 left, opposite No. 2; (2) Nos. 2, 3 and 4 face inward toward patient; (3) all stoop till buttocks rest on heels; Nos. 2 and 3 pass hands and fore-arms under the shoulders and thighs of patient, (No. 2 palms down, No. 3 palms up), and lock fingers; No. 4 slips hands and fore-arms under thighs and legs, palms up, taking care to properly support an injured member, (if it be a lower extremity); No. 1 stands fast, or moves to any point necessary to direct his squad, or to assist it. The patient, if able, is directed to place his arms about the necks of Nos. 2 and 3. This movement is executed in same way from squad in line. No. 4 being absent, the movement may be executed as prescribed in par. 81. The necessary "first aid" is rendered before patient is lifted.



51. 1. Lift. 2. PATIENT.

(1) All together carefully rise erect. No. 1 may now advance to right side of litter, grasp it, right hand near, left far side, and pass it in between bearers, under patient; or the command is given.

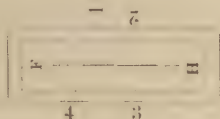
1. Forward. 2. MARCH.

(1) All (Nos. 2, 3 and 4) advance by side steps over litter and, (2) halt when patient's head is at head of litter.

52. 1. Lower. 2. PATIENT.

(1) Nos. 2, 3 and 4 carefully lower patient, keeping as straight a back as possible, and bending knees until buttocks rest on heels; (2) gently place him on litter, withdraw arms and, (3) stand erect. No. 1 improvises a pillow with patient's knapsack, blanket, or other convenient thing, and places it at head of litter before patient is lowered. No. 4, after patient is on the litter, gathers up his arms

and other property which he carries to dressing station, or ambulance. No. 4 being absent No. 1 assists in lifting patient, par. 81.



53. 1. At (loaded) litter, 2. POSTS.

[From lower-patient, par. 52.]

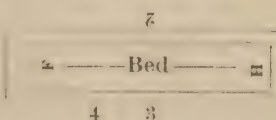
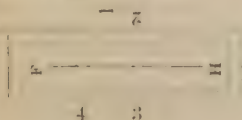
(1) Nos. 2, 3 and 4 face in direction of foot of litter (No. 2 right, No. 3 left, No. 4 left): (2) No 2 advances to foot of litter, No. 3 steps backward to his position at left rear, (head of litter), No. 4 side steps obliquely backward to left center. With No. 4 absent, and No. 1 acting in his stead, the movement is executed as above, except that No. 1 faces right, and side steps to right center. The movement may now proceed as in prepare-to-lift-litter, par. 47.



54. The litter having been lowered in such direction that the patient's head is, if possible, toward the foot of bed, (or other place of transfer, e. g., from one litter to another, etc.) the long axis of litter being a prolongation of long axis of bed, *bearers standing with backs toward foot of bed*, the command is given:

1. (From litter) Prepare to lift, 2. PATIENT.

) No. 2 steps backward to patient's middle, Nos. 3 and 4 advance, No. 3 opposite to No. 2, No. 4 to patient's knees:
) all (including No. 1, unless he be otherwise occupied) face litter. The movement now proceeds as in-prepare-to-lift-patient, from the 3rd number, par. 50, and, lift, and lower, patient, pars. 51 and 52.



55. 1. At litter, 2. POSTS.

[From lower-patient, par. 52, at bed, etc.]

(1) Nos. 2, 3 and 4 face in direction of litter (No. 2 right, 3 and 4 left); (2) Nos. 2, 3 and 4 advance to posts. No. 1 resumes his position at right center, after caring for patient, and directing his squad.

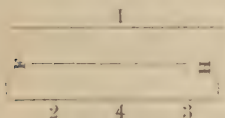
56 METHOD OF LIFTING AND LOWERING
PATIENT WITH FOUR BEARERS.

The method above set forth (pars. 50 and 51) is that recommended in the English bearer manual, as an emergency method only, the manner of its performance being the author's. The principle upon which the following described movements are based, is also adopted from the English, but greatly simplified in its application, no complicated movements being necessary to get to patient, or back to litter, moreover, it has the greatest possible advantage in transferring a patient from litter to bed, or from one litter to another. These movements are, therefore, taught as the only proper way to lift and lower patients, when it is possible, as it generally is, to have four bearers do the work. The litter having been marched to patient's head as described, the command is given.

57. 1. Lower, 2. LITTER, 3. Left,
4. Prepare to lift patient, 5. LEFT.

The motions proceed as in par. 49, to the fifth, when, at command *left*, No. 2 side steps left (instead of right) over handles, bringing Nos. 2, 4 and 3 on left of litter. At last command *left*, (1) all *bearers* advance to sides of patient, Nos. 2, 4 and 3 to left, No. 1 to right; No. 2 halts at left knee, No. 4 at left hip, No. 3 at left shoulder, No. 1 at right hip, opposite No. 4; (2) all face patient; (3) all kneel on one knee, bearers *left* always kneel on *left* knee, bearers *right* on *right* knee; No. 3 passes left hand through patient's right armpit, slipping it will up on his back, and

right hand under patient's left shoulder, when, if possible, fingers are clasped. Patient, if able, is directed to fold his arms about No. 3's neck. Nos. 1 and 4, at hips, slip hands and fore-arms under small of patient's back, and upper part of thighs, No. 1 palms down, No. 4 palms up, and lock fingers; No. 2 passes hands and fore-arms, palms up, under knees, and small of legs, taking care to properly support an injured lower extremity, if necessary. The squad having been marched to wounded, will render such "first aid" as may be necessary, before lifting, which done, at caution, *ready*, they grasp him as above described.



58. 1. Lift, 2. PATIENT.

(1) All bearers carefully lift patient, the greater part of the weight being raised by Nos. 1 and 4, and place him upon the knees of left bearers (Nos. 2, 4 and 3); (2) No. 1 stands erect, having released his hands from No. 4, faces left, advances to center of litter, (3) faces right, stoops, grasps litter, right hand near, left hand far side, (4) raises it, and carries it opposite bearers, against whose knees he places it, under patient, when (5) he kneels opposite No. 4, to assist in lowering.

59. 1. Lower, 2. PATIENT.

(1) All carefully lower patient onto litter; (2) stand erect. No. 1 improvises a pillow, etc.. No. 4 gathers up patient's effects, etc., par. 71.

60. 1. At litter, 2. POSTS, 3. Left.

(1) All face in direction of foot of litter; (2) all take posts. No. 2 at left front, as in par. 57.

61. 1. Prepare to lift. 2. LITTER (left).

Executed as in par. 47, except No. 2 steps right, instead of left, over handles.

62. TO TRANSFER PATIENT FROM LITTER TO BED, OR
OTHER PLACE.

The litter having been brought to the bed, as described in par. 54, the command is given:

1. Lower, 2. LITTER, 3. Left, 4. (from litter)
Prepare to lift patient, 5. LEFT.

The litter is lowered as described in par. 57, and all bearers, at 5th command, *left*, take position at patient, as described in same paragraph, by (1) facing inward, and (2) stepping into position.

63. 1. Lift, 2. PATIENT, 3. ERECT.

Bearers having brought patient upon their knees, as described in par. 58, take firm hold of him, and stand erect, at command *erect*. No. 1 now relinquishes his hold and, at command:

64. 1. Forward, 2. MARCH,

Nos. 2, 4 and 3 carry patient, head first, over foot of bed, and halt, when his head reaches head of bed.

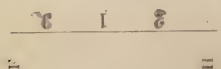
The patient is, at the command *lower-patient*, lowered on to the bed, the bearers release their hands, and stand erect, facing him. When patient is to be lowered to ground, or a low bed, the bearers (1) kneel on proper knee, lower patient on knees, and from thence (2) place him on the ground, etc., when (3) they stand erect.

65. 1. At litter, 2. POSTS, 3. Left

[From lower patient at bed, etc., par. 64.]

(1) All bearers face in direction of litter; (2) all advance to posts as described in par. 57, or, if *left* is not specified, No. 2 advances to left front of litter, and side steps right into his normal position (par. 43).

66. Should it, for any reason, be deemed desirable to lift patient from his right, the command *lower-litter-right*, instead of *left*, is given, when No. 3 (rear bearer) side steps right over rear handles, bringing Nos. 2, 1 and 3 on right of litter. At command *prepare-to-lift-patient-right*, No. 2 advances to patient's right knee, No. 1 to right hip, No. 3 to right shoulder, and No. 4 to left hip, opposite No. 1, when the movement proceeds as in par. 57; No. 4 performing the movements therein prescribed for No. 1, until patient is lowered on litter, or bed, etc.



Should it now be necessary to return bearers to litter, in same position, the command *at-litter-posts-right* would bring them there, otherwise, at command *at-litter-posts*, par. 43, No. 3, on reaching head of litter, will side step left into his normal position.

This method of lifting, and lowering, with four bearers, is practicable from almost any position of the squad, if it is remembered, that Nos. 1 and 4, invariably, are at the hips, No. 2 at the knees, and No. 3 at the shoulders of the patient. The command *right*, or *left*, following *prepare-to-lift-patient*, indicates the side of the *patient* to which the *three* bearers must go, and no matter how he is approached, Nos. 1 and 4 always proceed to the hips (as indicated in pars. 57, and 66), No. 2 to the knees, and No. 3 to the shoulders.

No. 1 being absent, No. 4 acts for him, and *vice versa*.

The patient may be lifted from the right, or left, side by three bearers, as well as by four, and this method, which can be executed by the motions and commands above given, is, in the opinion of the author, decidedly preferable to the method by three bearers, laid down in the Provisional Manual.

The squad being in line, at command *prepare-to-lift-patient-right (or left)*, the bearers proceed to their respective positions as above described, pars. 57 and 66.

Should it, for any reason, be necessary to lower litter at patient's feet instead of head, as directed, the squad will take the same positions at patient as described in par. 57, as follows: At command *prepare-to-lift-patient-left, (or right)*, bearers align themselves on front bearer, advance in line, and upon reaching patient's feet, assume positions described. No matter in what direction the litter be lowered, the bearers always assume the same relative positions in lifting. The patient may, however, be carried either head or feet foremost. The foot of the litter is always at the feet of the patient.

67.

1. Fold, 2. LITTER.

Squad being in position of *at-litter-posts* (par. 43); (1) all face litter; (2) Nos. 1 and 4 advance, stoop, grasp poles at center, palms up, hands separated two feet, arms extended, and, (3) rise erect; (4) Nos. 2 and 3 remove slings from handles, and lay them across litter at right angles to its long axis, near ends, close legs, and traverse

irons, fold canvas by doubling it on top of poles smoothly, place slings lengthwise of litter on canvas, buckles out, secure all neatly by a strap at each end, passed around poles and through loops of slings, and, (5) stand at attention. (When traverse irons are closed, Nos. 1 and 4 close in.)

For execution of motion lower- (folded) litter, from position fold-litter see par. 37.



68. 1. (No. 1) Right shoulder. 2. LITTER.

[From fold-litter, par. 67.]

At command *right shoulder*, (1) No. 1 relinquishes grasp of near (right) pole of litter with left hand, passes it over far (left) pole, bringing this pole above the other, canvas in, and grasps under pole eighteen inches behind right hand; at command *litter*, (2) he brings litter vertical to right shoulder: (3) all bearers face in original direction of foot of litter; (4) Nos. 1 and 4 side step to posts; (5) No. 1 slopes litter on right shoulder, brings right hand below left and drops left hand to side.



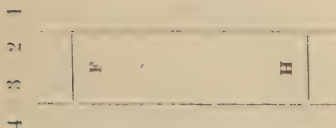
69. 1. Form, 2. RANK.

[From at-litter-posts, par. 43.]

At command *rank*, (1) all bearers advance and align themselves on front bearer, who advances one pace, in regular order: Nos. 1, 2, 3 and 4.

This movement is executed to bring the squad in line with the front bearer, who is usually No. 2, at foot of litter, or if facing in direction of head of litter, No. 3, from which point it can be marched in any direction desired, without litter (or with it, folded).

The detachment should always be brought to the detachment parade ground, before being dismissed. The litters may be deposited in a designated place by the Nos. 1 before the ranks are broken, in manner prescribed in par. 41.

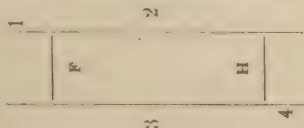


70.

1. Change, 2. POSTS.

If in position of at-litter-posts (par. 43), (1) Nos. 1 and 3 advance to right front, and left center, respectively, on a line with Nos. 2 and 4; (2) Nos. 2 and 4 backward step to right center, and left rear, respectively; (3) all side step into position.

If in line, (1) Nos. 1 and 3 advance a short step; (2) Nos. 2 and 4 side step right, back of Nos. 1 and 3; (3) Nos. 1 and 3 step obliquely (left) backward into line.



PART III.

MANEUVERS WITH AMBULANCE WAGON, AND
LITTER.

71. The standard ambulance wagon of the U. S. Army, for which the following drill is provided, is that known as the "Red Cross" ambulance; its extreme length is 11 ft. 1 1-2 in., and width 4 ft. 2 3-4 in. over all.

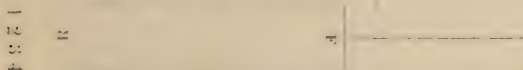
The clear inside floor space measures 6 ft. 6 in. in length by 3 ft. 11 in. in width. Beneath the driver's seat there is a box for medicines, dressings etc., (at one end a water keg) and back of it, a compartment to contain patient's effects etc. There are four inside upholstered cushions, making a continuous line of seats on either side, which, when the vehicle is prepared for recumbent patients, are secured against side walls, and act as side cushions. The wagon, complete, weighs about 1500 lbs., and will carry *eight patients sitting, or four sitting and one recumbent, or two recumbent*. The litter rests, one on either side, consist each of two light elliptical half springs, secured at one end to floor, the other end free, having a wheel which takes up the motion of the spring. These springs (two on either side) sustain an iron bar 6 ft. long (with four slots), which carries four wooden rollers, at rear, center, and front, reaching across floor, and about 6 in. above it. One roller, smaller in diameter, is arranged with a stop piece at either end, to prevent the litter rests from spreading. The loaded litters are passed in on these rollers. (For full description see report of Board of Officers, etc., Washington, D. C., 1878.)

This wagon, upon the whole, furnishes a very satisfactory vehicle for the transport of wounded. Complaints against it are loud and frequent, but any ground for these, lies rather in the fact that the wagon is not properly cared for, than not properly constructed. Standing exposed to the weather, unmoved, uncovered, and uncleaned, for months, as it often does, no wonder, when a sudden emergency arises requiring its use, it runs heavy, and often breaks down. What wagon would not? The ambulance (Ofis) litter is described in par. 16.

As the Provisional Manual prescribes that the Nos. 4 of

the litter squads shall be ambulance drivers, the movements, as therein set forth, practically resolve themselves into litter drill with three bearers. For many reasons this disposition of the Nos. 4 will not be found practicable in actual field work, and is only considered in these notes as a contingency.

The Nos. 4 as bearers of the medical knapsacks, as well as of the property of the wounded, are far too important members of the litter squads to be dispensed with, under ordinary circumstances. Their function at the wagon, should pertain chiefly to the care of patient's property, and the securing of the head end of litter (if necessary): the actual loading being done by the Nos. 1, 2 and 3; only in cases of emergency should the Nos. 4 be detached from their squads, and left with the wagons.



The squad will be marched to the rear of ambulance, so as to bring its right (No. 1) toward the left side thereof, and halted two yards distant, facing the ambulance, center of squad being in prolongation of long axis of ambulance: when the command may be given:

72. 1. At ambulance, 2. POSTS.

All advance close to rear of ambulance. No. 4 (when necessary) at command *posts*, faces left, advances by column-right, to left front of wagon, and mounts the box, to act as driver (if so ordered), secure front of litter, deposit patient's property, etc.; otherwise, he advances with the rest of the squad to rear of wagon.

73. 1. For one (or two litters, or without) litter prepare, 2. AMBULANCE.

The order is qualified in accordance with the requirements of the occasion.

If ambulance be required for one patient recumbent, and others sitting, it will be prepared for one litter: if for two recumbent patients, it will be prepared for two litters: if all are able to sit, the side cushions will be arranged as seats.

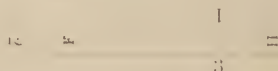
From above described position (par. 72), Nos. 1 and 3 open tail-gate. No. 1 (assisted by No. 2, if necessary,) enters ambulance, arranges interior for one, or two, or without litters, as directed, places designated number of litters

unopened upon the rollers, at center of ambulance, and resumes post.

74. 1. (From ambulance) Take. 2. LITTER.

(1) No. 2 pulls out the handles at end of litter, grasps them, and steps backward, drawing the litter out; (2) Nos. 1 and 3 face inward, and when the litter is 3-4 out, grasp it in manner described in open-litter (par. 46), hands nearest head end, 1 foot therefrom, others at center, and follow direction of march of No. 2 by side steps, till head of litter is one yard from rear of ambulance, when, (3) all halt. If No. 4 is with squad, he faces litter with No. 3 and stands fast, or performs such duty as directed to.

For a description of execution of command, No. 1 right-shoulder-litter, from position of squad in par. 74. See par. 68.



75. 1. Lower (folded), 2. LITTER.

[From ambulance, par. 74.]

(1) All stoop, lower litter to ground, canvas up; (2) stand erect; (3) face in direction of foot of litter (No. 1 right, No. 2 right about, No. 3 left, No. 4 left).

This motion is executed when it is not deemed necessary to open litter immediately. If the squad is to be marched away, the command form-rank (par. 69) is given, which brings it to foot of litter, (or it may be faced about, and closed on No. 3 at head of litter, which inverts it.) If, however, it is desired to bring the bearers to their posts at litter, from the above described position of lower-litter (par. 75), the command is given:



76. 1. At (folded ambulance) litter, 2. POSTS.

[From lower-litter, par. 75.]

(1) No. 1 side steps right to center, No. 2 steps right obliquely backward to right front, No. 3 steps backward to left rear, No. 4 advances to left center;

All movements now proceed as described in maneuvers

with litter, modified by the absence of No. 4, and the non-use of slings.



77. 1. (From ambulance) Open. 2. LITTER.

[From at-litter-posts, par. 76.]

All bearers being present, the motions proceed as in par. 46. If No. 4 is absent, No. 1 advances to center of litter, stoops, grasps right pole with right hand, left pole with left hand, and raises litter horizontal, arms extended. The motions now proceed as described, except that No. 1 lowers litter, etc., after it is opened.

1. (From ambulance) Open. 2. LITTER.

[From take-litter, par. 74.]

(1) No. 1 grasps litter at center, right pole with right hand, left with left hand; No. 2 advances left obliquely one pace to right front, and faces right, No. 3 side steps right to left rear; (2) Nos. 2 and 3 (when litter is provided with slings, unbuckle straps, etc., par. 46), pull out handles, straighten traverse irons, and open legs, when they stand at attention; (3) No. 1 lowers litter to ground; (4) stands erect; (5) all face foot of litter; (6) No. 1 side steps into position. No. 4 assumes his post at left center, when other duties are completed, and when present from their beginning, the motions are executed as in par. 46. This movement brings bearers into position at-litter-posts, par. 43.

Ambulance litters, unless used as field litters, do not require slings, and in maneuvering with them, ordinarily, the motions pertaining to the slings are omitted.



78. 1. Prepare to lift, 2. LITTER.

If slings are used, the motions proceed as in par. 47, otherwise, (1) Nos. 2 and 3 side step between front and rear handles, respectively; (2) stoop, and grasp handles firmly.

79. 1. Lift (open), 2. LITTER.

This movement proceeds as in par. 48, when No. 4 is present, if not, and the litter slings are used, (1) Nos. 2 and 3 rise slowly erect, arms extended, and hands securely grasping litter handles; (2) No. 1 advances to No. 2, arranges sling, and then by the left, around foot of litter, to No. 3, whose sling he arranges, and, by the left, around head of litter, to position. Without slings No. 1 and, if present, No. 4 simply stand fast.

80. TO LOAD AMBULANCE.

When ambulance litter is used also as field litter, it is halted and lowered, head one yard in rear of ambulance, and in line of its long axis, head of patient nearest ambulance, bearers facing in direction of foot of litter, and consequently with backs to ambulance.

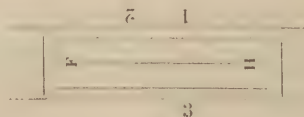
When a loaded field litter has been brought to rear of ambulance, and it is necessary to prepare-ambulance (par. 73) etc., and then transfer patient from field litter to ambulance litter, before loading, the field litter is lowered five yards in rear of ambulance, head toward ambulance, the squad is faced to rear, closed on No. 3, and marched to position of at-ambulance-posts (par. 72). The ambulance is then prepared, litter taken, and opened.

81. 1. Prepare to lift, 2. PATIENT.

Method of the Provisional Manual.

With No. 4 present, this movement is executed as in par. 50, No. 4 being absent it is executed as follows: Squad in position at-litter-posts (par. 43). (1) All advance to sides of patient, No. 1 to right hip, No. 2 to right knee, No. 3 opposite No. 1, at left hip; (2) all face patient; (3) all stoop, etc., from which point the movement proceeds as in par. 50. (No. 1 taking place of No. 2, No. 2 that of No. 4, but on opposite side of patient).

The movement is executed in the same way, squad being in line.



82. 1. Prepare to lift. 2. Patient. 3. LEFT (or right).

Method of the author.

Squad in position at-litter-posts (to which it is brought in par. 77), at the command *left*, all bearers advance as in par. 57. No. 2 obliquing left until he comes in front of Nos. 4 and 3, when the movement proceeds as described. If however, after the patient has been lifted to bearer's knees, it is deemed desirable to place the ambulance litter under him instead of carrying him to it, No. 1 removes the field litter before executing the prescribed movements. No. 4 being absent, at the command *left*, Nos. 2, 1 and 3 advance from position at-litter-posts (par. 43), to left side of patient in order named, when the movement proceeds as described. With three bearers, the command *erect*, follows that of lift-patient. No. 1 being absent, No. 4 takes his place.

It is readily seen that, as heretofore stated, these movements may be executed under almost any conditions, if it is always remembered that, Nos. 1 and 4 invariably go to the patient's hips, No. 2 to his knees, and No. 3 to his shoulders.

The patient having been lowered, the squad, in this method, is always brought to position of at-litter-posts (par. 43), before preparing to load. Should No. 1 be acting for No. 4, or *vice versa*, at command *posts*, he advances around foot of litter to his post, No. 2, or 3, when necessary, side stepping to his. If desirable, the command at-litter-posts may be qualified by *left* or *right* (pars. 60 and 66).

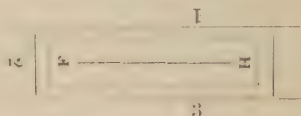
83. Lift-patient (pars. 51 and 58), lower-patient (pars. 52 and 59) etc., movements necessary to the transfer of wounded, are, practically, all executed as laid down in maneuvers with hand litter.

84. 1. Prepare to. 2. LOAD (ambulance).

[From at-litter-posts, par. 43.]

(1) All face litter; (2) No. 1 advances to right center of litter, No. 2 steps between handles. (If slings are used, Nos. 2 and 3 now stoop, remove slings and place them on the ground, left of litter;) (3) No. 2 faces left, No. 3 side steps left, opposite No. 1. No. 4, unless acting for No. 1, when he occupies No. 1's post, usually takes no part in the loading of the patient, his duty being to load the patient's property, supply medicines, or dressings from his knapsack, etc.

If, for any reason, it is desired to load foot first, instead of head, as usual, No. 3 performs the work assigned to No. 2 in foregoing movement, and *vice versa*. The litter, of course, is in this case lowered with foot nearest ambulance.



85. 1. Prepare to, 2. LOAD (ambulance).
(Squad in position lower-patient, par. 81, No. 4 absent.)

Method of the Provisional Manual.

(1) No. 1 stands fast, No. 2 side steps right, to foot of litter, advances over handles, stoops, removes sling, if any, and places it on the ground, stands erect in time with No. 3, who, if necessary, removes his sling; (2) No. 2 faces left, No. 3 side steps left opposite No. 1. No. 1 sees that ambulance is properly prepared before loading.



86. 1. Raise, 2. LITTER.

(1) All stoop, Nos. 1 and 3 close rear handles, and grasp litter, both hands under poles, separated two feet, palms up, hands nearest head of litter, one foot from ends of poles. No. 2 grasps handles at foot of litter; (2) all slowly rise, bringing litter to level of rear roller (in ambulance), on which, (3) they rest the rear (head) end of litter poles, when Nos. 1 and 3 then close rear legs.

87. 1. Pass, 2. IN.

No. 2 now pushes litter into ambulance (taking care to keep it level), assisted, if necessary, by Nos. 1 and 3, who, as the litter is pushed home, close front (foot) legs, and face rear of ambulance, in line with No. 2; Nos. 1 and 3 close tail-gate, and No. 4 (if present with squad) takes his position next to No. 3. Before the tail-gate is closed, the litter may be secured with straps, or otherwise, as seems fit. No. 4 (or, in his absence, No. 1) gathers up slings, if

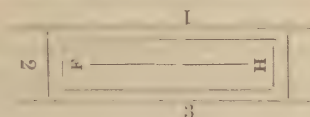
any, and places them in ambulance, under litter.

88. 1. (From ambulance) Prepare to, 2. UNLOAD.

Always from position at-ambulance-posts, par. 72. (1) Nos. 1 and 3 open tail-gate, and unfasten lashings (if any) securing foot of litter.

89. 1. Pass, 2. OUT.

(1) No. 2 grasps handles at foot of litter, pulls them out, and slowly withdraws litter, keeping it level with rollers; (2) Nos. 1 and 3 face litter as it is being withdrawn, open legs at foot of litter, and grasp it at center with hands (nearest foot) under poles. When head of litter rests on rear roller, Nos. 1 and 3 open legs and handles at head, and grasp poles with free hands, one foot from head ends; (3) all lift litter, and carry it to rear, till head is one yard from ambulance, when the squad *halts*.



90. 1. (From ambulance) Lower (loaded), 2. LITTER.

(1) All stoop, and lower litter carefully to ground; (2) all stand erect.

91. 1. At (loaded ambulance) Litter,, 2. POSTS.

[From lower-litter, par. 90.]

(1) All face in direction of foot of litter (No. 1 right, No. 2 right about, No. 3 left): (2) No. 1 side steps right to center, No. 2 side steps right, over handles, to front, No. 3 steps backward to left rear, No. 4 (or in his absence No. 1) closes tail-gate, brings the slings, when used, from the ambulance, passes them to Nos. 3 and 2, and resumes his post. Nos. 2 and 3 grasp slings at center, between thumbs and fore-fingers of right hands, elbows bent, hands to front. No. 4, if with squad, after passing slings, and closing tail-gate, takes position at left center.

If for any reason the litter has been loaded foot first, at command at-litter-posts (par. 91), (1) all bearers face left; (2) all march to their respective positions; (3) Nos. 1 and 2 face about in direction of foot of litter.

92. When the ambulance is loaded, and it is necessary (as it almost always is, in post work), to carry the bearers

in the ambulance, with the wounded man, the bearers are assigned their positions, e. g., No. 4 outside, Nos. 1, 2 and 3 inside, and at the command:

1. Prepare to, 2. Mount,

proceed to their respective positions, No. 4 to left front of ambulance, Nos. 1, 2 and 3 to position of at-ambulance-posts (par. 72). At command:

3. MOUNT,

No. 4 mounts the box. Nos. 3, 2 and 1. in the order named, get inside the ambulance. No. 1, in absence of higher authority, then commands, *forward*, when the driver starts the ambulance; at *halt* he stops it.

When the ambulance has reached its destination, the order 1. *prepare to dismount*, is given as a cautionary command, and then

2. DISMOUNT,

when bearers all dismount, in order, Nos. 4, 1, 2 and 3, and resume the position of at-ambulance-posts (par. 72).

93. It is not assumed that the movements herein described, cover the whole field of bearer drill with hand-litter, and ambulance wagon. Many emergencies will certainly arise which have not been anticipated, but it is believed, that a thorough knowledge of one good way to execute these movements, will enable the emergencies to be met in, at least, a soldierly manner.

PART IV.

94. OBSERVATIONS UPON THE PROPER METHOD OF CARRYING
LOADED HAND-LITTERS.

It is believed by the author that, except for short distances, good field litter work cannot be done, unless the bearers are provided with shoulder slings. The entire weight of the load should be supported by the slings, and the hands of the bearers used, ordinarily, only to steady the litter. When the pressure upon the shoulders becomes wearisome, the posts should at once be changed. Care must be taken that the slings are so adjusted to the height of the bearers, that the litter is level, that they fit smoothly about the necks, lie in the hollows of the shoulders, and that the loops are pushed sufficiently far back, to permit of the handles being grasped, by front bearer, in front of loops, and rear bearer, behind them.

In marching with loaded litter, No. 2 (front bearer) steps off with right, and No. 3 (rear bearer) with left foot. The pace is twenty inches long and, as a rule, at the rate of one hundred and twenty to the minute, knees slightly bent, motion from the hips.

In passing over a rough country, every effort must be made to keep the litter level; and herein lies the distinguishing quality of well trained bearers. To accomplish this, the hands, arms, and knees are used, and both bearers must carefully watch the inequalities of the ground, and meet them by raising, or lowering, the ends of litter.

It is provided in these notes that, generally, a litter should be carried with the patient's feet to the front; in going up hill, however, the head should usually be first, and the rear (foot) bearer's sling must be shortened, in order to keep litter as nearly level as possible. The reverse obtains in going down hill, when feet should be first. Cases of fracture of a lower extremity furnish the exception to this rule; in injuries of this kind, the litter must be kept level, or the foot higher than the head, to prevent the patient's body from working down upon the helpless member.

High obstructions of all kinds should be (if possible) avoided, throw down a wall or fence, or find an opening, rather than risk distress, or a fall, to the patient, in attempting to pass over the obstacle. * * It is better that the

transportation should be somewhat delayed, than the safety of the patient's limbs or life risked.

If, however, a fence or wall must be passed, which cannot be thrown down, or in which there is no convenient opening, and which is not over six feet high, the litter is lowered, and the command given:

95. 1. High obstacle. 2. Prepare to lift. 3. LITTER.

At command *litter*, (1) No. 1 steps backward to right rear, No. 4 forward to left front; (2) all stoop, and each grasps a handle with both hands.

1. Lift litter. 2. FORWARD.

At command *forward*, (1) the litter is lifted carefully to the top of the wall, on which the front handles are rested; (2) Nos. 2 and 4 close the front and rear legs, when the litter is pushed along until most of its weight rests on the wall; (3) Nos. 2 and 4 now climb over the wall, and seizing front handles, all advance the litter till its rear handles rest on wall; when (4) Nos. 1 and 3 climb over, grasp each a rear handle; and (5), after opening legs, all lower litter to ground. At the command *at-litter-posts* (par. 43), the squad assumes that position. In this movement the slings must not be placed on the handles when the litter is lowered, but carried by Nos. 2 and 3, across shoulders.

When a low wall, etc. (4 ft. or less) is encountered, the litter is not necessarily halted and lowered, but the following command may be given:

96. 1. Obstacle. 2. MARCH.

At the command *march*, (1) Nos. 1 and 4 advance to center of litter, and grasp poles with both hands, as in open-litter (par. 46). On reaching obstacle, No. 2 slips sling from handles, and climbing over wall, receives litter as it advances; (3) Nos. 1 and 4 now pass the obstacle and resume their places at the poles; when (5) the litter is carried over, clear of the fence, No. 3 slipping his sling from the handles, and climbing over. The litter is now halted. Nos. 2 and 3 take their places between handles, and the slings having been slipped on to handles, Nos. 1 and 4 resume their posts, and the march proceeds.

In this movement the litter legs are closed, if necessary, and opened by Nos. 1 and 4. With less than four bearers the litter must be halted, and lowered, first, when Nos. 2 and 4 take posts at front handles, and litter is advanced, practically, as in par. 95.

In crossing excavations, when the ditch is narrow (not

over 4 ft.), the litter is not necessarily halted, but, at the command:

97. 1. (Low) Obstacle, 2. MARCH.

(1) Nos. 1 and 4 advance, step into ditch, face inward, and as the litter approaches, take hold of poles, keeping litter level till the obstruction is passed, when, (2) they resume their posts.

If the excavation be broad, or deep, the litter is lowered near the brink, (Nos. 2 and 3 retaining slings on shoulders,) and the command given:

98. 1. Low obstacle, 2. Prepare to lift, 3. LITTER.

At command *litter*, (1) Nos. 2 and 4 get down into the ditch, and, if possible, grasp front handles, No. 2 right, No. 4 left; No. 1 advances to right center, No. 3 to left center, opposite No. 1, (2) face inward, stoop, and grasp poles, as in par. 46.

1. Lift litter, 2. FORWARD.

(1) Nos. 1 and 3, assisted if possible by Nos. 2 and 4, lift litter, and pass it along until rear legs, or handles, rest on the edge of ditch. (So soon as Nos. 2 and 4 have securely grasped front handles, Nos. 1 and 3 pass litter along, slipping poles through hands, until they come to ends of rear handles.) (2) Rear bearers now get down into the ditch, and grasp rear handles, or, if necessary, the side poles (No. 1 right, No. 3 left), when (3) all bearers lift, and carry litter. Nos. 1 and 3, if necessary, slipping poles through hands until they come to rear handles.

In this position the litter is carried to the opposite side of the excavation, reaching which, the movement proceeds as prescribed in par. 95 or 96.

99. To Carry a Loaded Litter Up, or Down, Stairs.

A loaded litter is usually carried up stairs head front, and down stairs foot front, as follows, viz:

The litter is marched to the foot of the stairs in the usual manner, faced about, at the command *litter-right-about-march*, and halted, when the command is given:

100. 1. Prepare to, 2. ASCEND.

(1) Nos. 1 and 4 face inward, advance to center of litter, each grasps a pole with both hands, as in par. 46, and supports litter; (2) Nos. 2 and 4 slip slings off handles, and face about; (3) No. 3 slips loops on to handles, and grasps (head) handles, No. 2, at same time, grasping handles at foot of patient; (4) Nos. 1 and 4 now side step to rear (foot)

handles, and each grasps a handle firmly with both hands, when the command is given:

1. Forward, 2. MARCH.

The litter is carried by Nos. 3, 1, and 4, the rear bearers (Nos. 1 and 4) keeping it as level as possible by, if necessary, resting the rear handles on shoulders. No. 1 right, No. 4 left. They must carefully observe patient, to prevent accident. In this movement No. 2 falls out with sling on shoulders and accompanies litter, to render any assistance required. No. 1 or 4 being absent, No. 2 acts for him, and with three bearers only, the litter must be lowered before the command *prepare-to-ascend* is given.

If the place of transfer is near at hand, the litter is carried by the bearers, in positions described, to it, lowered, the squad faced about and brought to posts, preparatory to lifting patient, or other movement.

If the litter is to be carried any considerable distance, it must be lowered as soon as possible after the stairs are mounted, and the normal positions resumed, at the command, *at-litter-posts* (par. 43).

101. To carry a loaded litter down stairs, it is halted at the top of the stairs, and the command is given:

1. Prepare to, 2. DESCEND.

(1) At command *descend*, Nos. 1 and 4 advance to right and left front, and each firmly grasps a handle with both hands; (2) No. 2 (at a caution from No. 1) slips sling off of handles, and stands aside, to assist if necessary.

1. Forward, 2. MARCH.

At the command *march*, all advance, front bearers, as the descent proceeds, bringing handles to shoulders, if necessary, to keep litter as level as possible. Rear bearer carefully observes patient, to see that no accident happens to him. The bottom having been reached, if the place of transfer is distant, the litter is halted, No. 2 resumes his post between front handles, and the squad again assumes its normal position, by Nos. 1 and 4 stepping backward to their posts. If near at hand, the litter is carried to the desired place, lowered, etc., preparatory to lifting patient. No. 1 or 4 being absent, in this movement, No. 2 acts for him, and in this case, the litter is lowered before the descent begins. When, for any reason, it is necessary to carry a patient feet first up stairs, or head first down stairs, the bearers are simply reversed, in the former case No. 2 becoming front bearer, and in the latter No. 3.

102. Too great stress cannot be laid on the evil of carrying a loaded litter upon the bearers' shoulders, this should be *absolutely prohibited* with unskilled bearers, and only permitted to the most skillful, in passing up or down very steep grades, such as a stair-way.

The use of shoulder slings, by better distribution of weight, will be largely instrumental in overcoming the tendency, so apparently natural to untrained litter bearers, to place the litter upon the shoulders.

PART V.

103. OFF-HAND WAYS OF CARRYING WOUNDED.

Emergencies will frequently arise, requiring the improvising of transport for wounded; what to use will largely depend upon the materials at hand, and the ingenuity of those who must use them. The suggestions of the Provisional Manual give practical direction to this ingenuity, chiefly by object lessons, but it leaves much to be desired, in the way of instruction, as to the best methods of applying extemporized means.

Holding to the theory advanced in the introduction to these notes, the author is of the opinion that, only by exact training, can be taught the principles and practice of bearer work. If soldiers are instructed to use familiar things for extemporary bearer work, unfamiliar things will be more advantageously used, when an emergency presents.

It has been said that the tendency of practical warfare to-day, is to individualize the soldier. Such is doubtless the case, but this very tendency, makes it the more necessary that the soldier should be thoroughly taught, the best way of accomplishing that for which he exists; without such training, he and his fellows will constitute simply a uniformed, but ununiform mob, and individuality of action will generally be in the wrong direction.

It goes without saying, that off-hand bearer work can never equal that done with regular appliances, and should never be permitted, except in emergency.

From one to four bearers may be used for off-hand work, and the greater number, within this limit, the better; they should first be systematically taught to use those things generally at hand, and then unfamiliar things.

The soldier's rifle and blanket are his most constant companions; they furnish fair material from which to extemporize a hand litter, and are thus prepared.

104. Each squad should be supplied with two rifles, carried by Nos. 1 and 3, at a carry-arms, (these bearers must assure themselves that the rifles are unloaded,) and a regulation blanket rolled up, and carried by No. 2 over left shoulder, ends being secured by strap, and hanging at right side.

The detachment is formed as prescribed, and the com-

mand is given:

1. Twos right. 2. March. 3. HALT.

4. Squads to 4 yds. interval. 5. Forward. 6. MARCH.

At last command *march*, squads take the prescribed interval, and are halted.

1. Prepare blanket. 2. LITTER.

(1) Nos. 1 and 2 face right about; (2) No. 2 unbuckles strap, slips it under his belt, seizes blanket roll with right hand at left shoulder, brings it to the front, and passes one end to No. 1, when Nos. 3 and 4 seize free edge of blanket as near ends as possible; (3) Nos. 1 and 2 step backward till blanket is unrolled; (4) all stoop, and place blanket smoothly on the ground; (5) Nos. 1 and 3 (after pulling out ramrods 12 inches) lay rifles under edges of blanket, muzzles to foot, hammers in; when (6) all bearers roll blanket tightly about rifles, an equal number of turns on each piece, until the space between them measures twenty inches, and (7) all stand erect.

The squad may now be marched to patient to be lifted, or the command given:

105. 1. At (blanket) litter. 2. POSTS.

(1) Nos. 1 and 3 side step two paces toward head, Nos. 2 and 4 two paces toward foot of litter.

106. 1. Prepare to lift (blanket). 2. LITTER.

(1) All bearers stoop, grasp rifles firmly with both hands, separated two feet, palms up.

107. 1. Lift (blanket). 2. LITTER.

(1) All rise slowly erect with litter.

The blanket litter may now be carried in any direction, and all movements of loading, unloading, etc., executed as laid down in maneuvers with hand litter.

When the improvised litter is no longer required, the command is given:

108. 1. Break (blanket). 2. LITTER.

[From prepare-to-lift-litter, par. 106.]

(1) All bearers stoop, grasp litter, and (2) rise with it; (3) Nos. 1 and 2 step backward, unrolling blanket, until its edges come to the hands of all bearers; (4) all stoop, lowering pieces, and blanket to ground; (5) Nos. 1 and 3 withdraw rifles, bringing them to an order-arms, as they stand erect, and return ramrods. No. 2, assisted by No. 4, folds blanket lengthwise toward himself, rolls

it tightly toward No. 4, brings ends together and secures them by strap; (6) Nos. 2 and 4 stand erect, the former lifting blanket, both hands outside; (7) No. 2 places blanket over his head, and slips right arm through, bringing strap to right side..

The commands may now be given:

1. Carry, 2. ARMS.

3. 1st set of twos about, 4. FACE.

5. Twos left, 6. March, 7 HALT, etc.

Squads being in column of twos, at intervals of four yards between squads, Nos. 1 and 3 with rifles, the command is given:

109. 1. Prepare coat, 2. LITTER.

(1) Nos. 1 and 2 face about; (2) Nos. 2 and 4 remove their blouses, turn lining side out, button them up, sleeves inside, and grasp them with thumbs in sleeve holes, blouses hanging down, back out; (3) Nos. 1 and 3 bring rifles horizontal across front of body, hammers down, muzzles to right and left, respectively; (4) pass rifles through sleeves of No. 2's blouse (buttons down), and slip blouse along until it comes to the butts; No. 4 now slips his blouse on rifles, in the same way, assisted by No. 2, until the lower edge comes to muzzles; (5) all grasp rifles and lower litter to ground; (6) all stand erect.

The squad may now be marched to patient, or to posts at litter, etc., as prescribed for maneuvers with blanket litter.

110. 1. Break (coat), 2. LITTER.

[From prepare-to-lift-litter, par. 106.]

(1) All stoop, grasp litter, and (2) stand erect; (3) Nos. 2 and 4 slip front blouse off rifles; (4) No. 4 seizes it, thumbs in arm holes, buttons front, blouse hanging down; (5) No. 2, assisted by Nos. 1 and 3, slips rear blouse off, and comes to same position as No. 4, Nos. 1 and 3 bringing rifles to a carry-arms; (6) Nos. 2 and 4 unbutton blouses, turn right side out; (7) put them on, button up, and stand at attention.

111. In improvising litters, of course, any suitable materials may be substituted for those mentioned in the foregoing exercises, which are merely in this respect suggestive.

A wounded man can be quite comfortably carried in the arms of three bearers, in positions of prepare-to-lift-pa-

tient (pars. 50, 57, or 66) for a short distance, and litters may be readily improvised for three, and two bearers.

By substituting two poles (tent poles), eight feet long, for the rifles, and three blouses, for the two blouses used in preparing coat litter, we have materials for a fairly comfortable litter, which may be carried by two bearers, between the front and rear ends of poles. Gun slings could be used as litter slings, in an emergency requiring their use.

112. EXERCISES FOR TWO BEARERS, IN OFF-HAND METHODS OF TRANSPORTING WOUNDED.

These methods consist in extemporizing seats, with hands and arms, which can be used for short distance work, and of course, are not intended to supercede the improvising of litters for long distances, which may be carried by two bearers.

Many different methods have been suggested, one only will be here considered, as being the most practicable, and generally applicable. Two bearers are marched to head of patient, facing him, at command:

1. Prepare to lift, 2. PATIENT.

(1) No. 1 advances to right, No. 2 to left hip; (2) both face inward; (3) kneel, No. 1 on right knee, No. 2 on left, and each grasping an arm, they bring the patient to a sitting posture, with back against their knees. The patient is now directed to place his arms about the bearers' necks, if able, when they each place one arm across his back, and slip hand and forearm under thighs, locking fingers. (No. 1 at the right side, as always, passes his hand palm down, No. 2 at left side, palm up.)

113. 1. Lift, 2. PATIENT.

(1) Bearers raise patient to their knees, and (2) slowly stand erect, lifting him. At command forward-march, bearers usually advance in direction of patient's feet.

If a lower extremity has been injured, after patient has been lifted to knees of bearers, the bearer on the side opposite injured limb relinquishes his hold, leaving patient on knee of other bearer, and goes to knees of patient, under which he passes forearms: from which position the patient is lifted.

114. A patient may be lifted into the saddle, from position

described in par. 113. Having been placed sidewise in the saddle, and supported there by No. 1, the proper foot is placed in the stirrup of the side on which bearers stand (near side, if right leg, or arm, is wounded, and *vice versa*) by No. 2, who then lifts the free leg, and rests it on the horse's neck, the patient slowly turning, and inclining backward, to permit of a more easy execution of the motion; No. 2 then goes to the other side of horse, brings the leg down, and places foot in the stirrup of that side, the patient having been brought erect by No. 1. To dismount a wounded man the reverse of these motions are used.

Of course, in this position, the patient must be able to assist himself somewhat.

115. TO EXERCISE ONE BEARER IN LIFTING PATIENT WITHOUT ASSISTANCE.

While it is not desirable that one bearer should, ordinarily, be required, or permitted, to lift a patient unassisted, emergencies frequently arise, both in active service, and under other circumstances, when a knowledge of proper methods of lifting, and carrying, by one bearer, is of the utmost value.

The first procedure, in these exercises, is to bring the wounded *erect*, and this, for all practical purposes, may always be done in the same way. If the patient is able to assist bearer, it will render latter's work so much the easier, and the motions may begin with any one, proceeding therefrom in regular order. It might be added, that these exercises are to be conducted without the assistance of anybody, or thing, except the patient. All apparatus intended for the use of one bearer, should be condemned, as encouraging single bearer work. In these exercises it is assumed, that the patient is lying supine.

116. 1st Position.

To bring erect.

(Bearer standing at patient's left hip, facing him.)

(1) Turn patient face downward; (2) face right and side step astride body; (3) bend forward, place hands in patient's armpits, grasp him firmly, and bring him to his knees; (4) slip forearms through armpits, clasp hands over stomach (bearer's knees slightly bent), and bring patient erect; (5) grasp left hand firmly with left hand, and place patient's left arm about bearer's neck, bringing him to

patient's left side.

From this 1st position the other positions proceed, beginning with the sixth motion, and it may, therefore, be regarded as the normal position in these exercises.

117. 2nd Position.

To place astride of back.

(6) Remove right arm from about patient; (7) bring right shoulder and hip in front of his left side, steadying with right hand, and loosening left; (8) direct patient to clasp hands in front of bearer's neck, and step directly in front of patient, back to him; (9) stoop, bring him forward on bearer's back, grasp legs, just above knees, and separate them; (10) bring him up on bearer's back, thighs resting on bearer's hips.

118. 3rd Position.

To place diagonally across back.

(6) Remove right arm from about patient; (7) bring right shoulder and hip in front of his left side; (8) stoop, pass right arm between patient's thighs, and back of right thigh, bringing bend of elbow to knee; (9) pull left hand firmly down on bearer's left chest; (10) rise erect, bringing patient well up on, and across back, and grasp his left hand with bearer's right.

119. 4th Position.

To place across shoulder.

(6) Drop patient's left hand, use both arms to support him, step around under left arm to facing him; (7) stoop, and place right shoulder as near navel as may be; (8) pass right hand and arm between thighs, securing right thigh firmly, with right forearm; (9) grasp patient's right hand with bearer's left, bringing it under bearer's left armpit, when the wrist is firmly grasped by bearer's right hand; (10) stand erect.

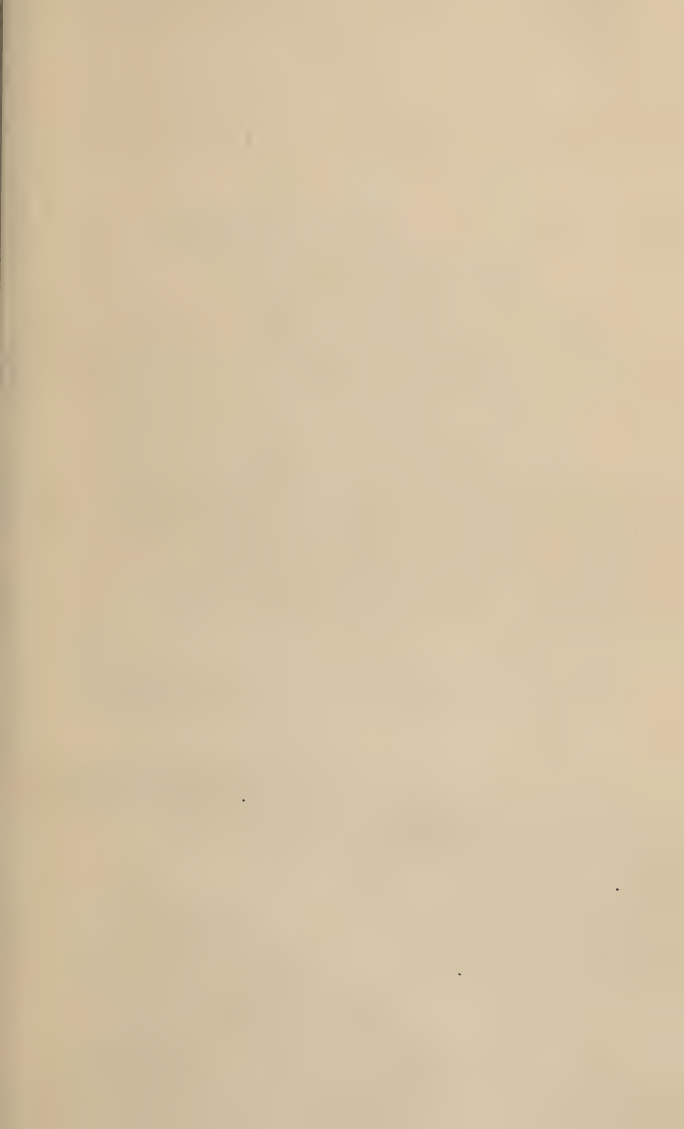
120. In lowering patient from these positions, the motions are simply reversed. Should a patient be wounded in such manner, as to require these motions to be conducted from his right side instead of left, as laid down, the change is simply one of hands, the motions proceed as directed, substituting right for left, or *vice versa*.

Other positions have been suggested by various authors, but those described, are sufficient for ordinary purposes, and are practicable; they bring the weight to be carried toward the center of gravity of the bearer, rendering it

more easy of management, while they place the patient (except 4th position) in a fairly comfortable posture. It goes without saying, that great weights should not be carried in front of the body.

121. TO PREPARE AND LOAD ORDINARY WAGONS TO
TRANSPORT WOUNDED.

In active service, the use of ordinary army, or other, wagons, for transport of sick and wounded, is of every day occurrence, and it is important that bearers should be practiced in preparing, loading, and unloading such vehicles. Patients may be laid on straw, or other like material, spread thickly in the bottom of the wagon, or on hand-litters suspended in the wagon by rope, or straps. The motions and movements heretofore fully described, under maneuvers at ambulance wagon, and with, or without, hand litter, will, if thoroughly understood, meet the requirements of any emergency of this character. It must, however, always be remembered, that such off-hand work demands a far greater amount of care, on the part of the bearers, for the safety and comfort of their patients, than when the proper appliances are at hand.



INDEX.

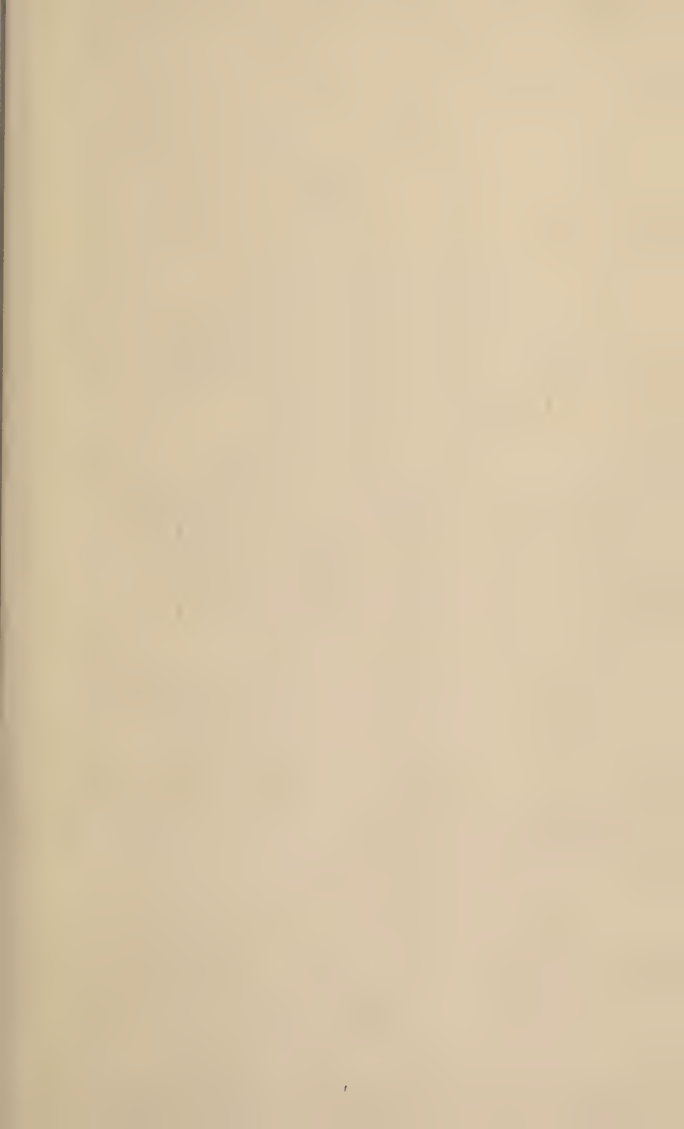
	Par.		Par.
A mbulance . . . Red Cross . . . 71.		from lower-patient, on bed . . .	55.
driver, No. 4 of squad, etc. . .	71.	left, 4 bearers	60.
(from) lower (folded) litter . . .	75.	right, 4 bearers	66.
(from) lower (loaded) litter . . .	90.	left, from lower-patient, on bed, etc.	65.
(from) open-litter, from at-litter-posts	77.	right, from lower-patient, on bed, etc.	66.
(from) open-litter, from take-litter	77.	A t (loaded ambulance) litter-posts	91.
(from) prepare-to-unload,	88.	(loaded) litter-posts, squad at lower-patient	53.
(from) take-litter	74.	B earer drill with hand litter	16.
litter, position of for loading	80.	Blanket litter— to prepare	104.
to load,	80.	Braces (litter slings)	16.
prepare, for one, two, or without, litters	73.	Break (blanket)-litter	108.
prepare-to-load, squad in position at-litter-posts	84.	Break (coat)-litter	110.
prepare-to-load, squad in position lower-patient, No. 4 absent,	85.	C hange-posts, from at-litter-posts	70.
prepare-to-mount, mount and dismount	92.	Change-posts, from in line	70.
position of squad at	71.	Close-order-march	6.
wagon, maneuvers with etc.	71.	Coat litter	109.
A scend—Stair-way, prepare to	100.	Command	15 <i>b</i> .
A t-ambulance-posts	72.	Count-fours	3.
(blanket) litter-posts	105.	D etachment—formation of 1. inspection of	8.
(folded ambulance) litter-posts	76.	muster of	15 <i>a</i> .
A t-litter-posts Squad in line	43.	to form	3.
squad in column of files	44.	to maneuver	7.
from form-rank	45.	Draw-swords (or knives)	9.
		Dressing packets Inspection of	15.
		Drill, bearer with hand	

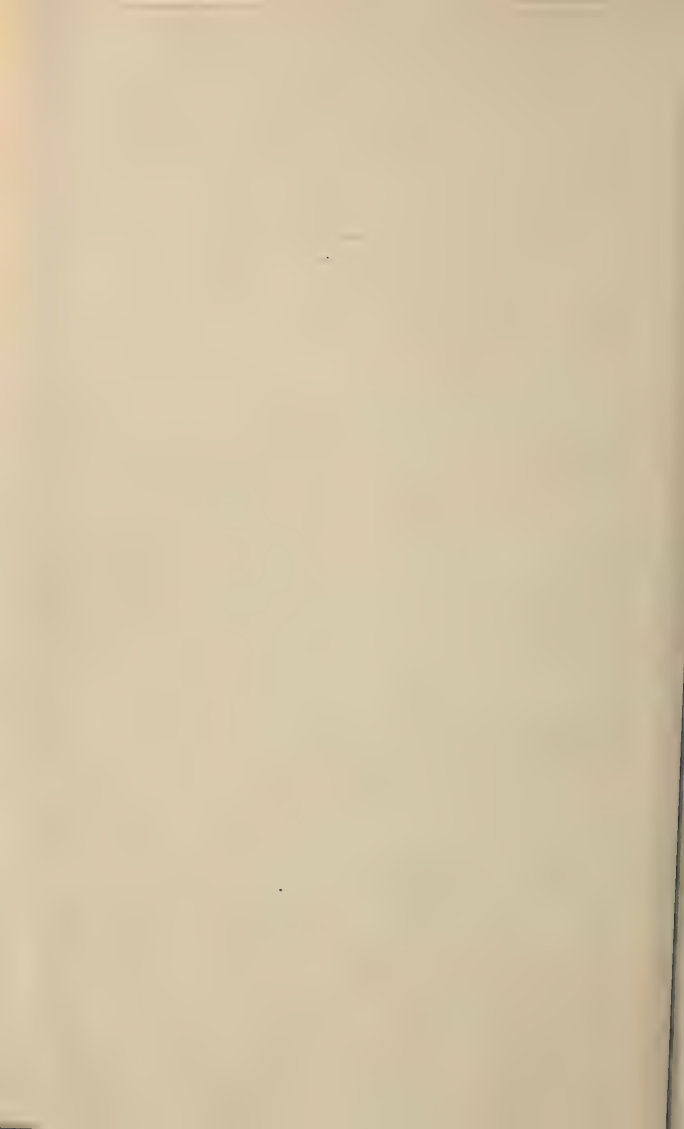
- litter..... 16.
- E**mergencies..... 103.
- Exercises in lifting and lowering patient for 2 bearers in off-hand methods 112
- for one bearer in lifting patient without assistance..... 115.
- 1st position, to bring erect 116.
- 2nd position, to bring astride of back..... 117.
- 3rd position, to place diagonally across back 118
- 4th position, to place across shoulder..... 119.
- in lowering patients from these positions etc.. 120.
- F**all-in..... 3.
- Field (Halstead) litter, position of when lowered to transfer patient to ambulance-litter..... 80.
- Field-litter, author's modification..... 16
- File-closers..... 2.
- File-on-litter, Nos. 1.. 19.
- First-aid rendered before lifting..... 50.
- Folded litter, manual of 22.
- to maneuver with..... 33.
- Fold-litter..... 67.
- Formation of the detachment..... 1.
- For one, two, or without litters, prepare-ambulance..... 73.
- Forward - march, with patient..... 64.
- Form - rank, from at-litter-posts..... 69.
- From ambulance, take-litter..... 74.
- Front..... 5.
- Front—march, execution and object of..... 41.
- G**round-litter..... 20.
- Guides..... 7.
- Gun slings, used as litter-slings..... 111.
- H**alstead hand-litter..... 16.
- High-obstacle, prepare-to-lift-litter..... 95.
- Hospital Stewards, posts of 2.
- senior, duties in forming detachment..... 3.
- senior duties in conducting movement file-on-litters..... 19.
- I**mprovised litters..... 111.
- ways of carrying wounded 103.
- Infantry tactics—motions and movements not described to be executed as in... 41.
- Inspection and Muster of a detachment..... 15a.
- arms..... 10.
- by Post Commander, 15a.
- of a detachment..... 8.
- of a detachment armed with rifles, or carbines 15.
- packets..... 15.
- Instructor superintends alignment of detachment 5.
- K**napsack men, Nos. 4... 3.
- unsling..... 12.
- open..... 12.
- repack..... 13.
- sling..... 14.

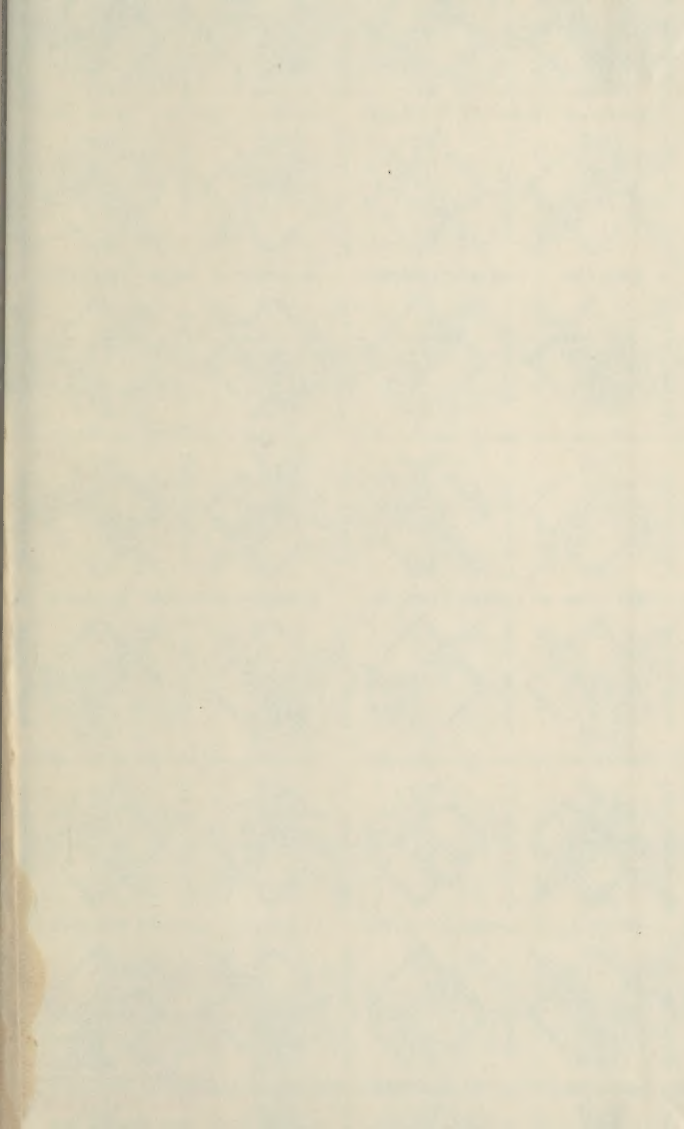
- Knives, draw.....9.
 inspection of.....10.
 return.....11.
- L**ay-on-loose-litters, after
 stack-litters.....31.
- Left-face.....3.
- Left-shoulder-litter (from
 right-shoulder-litter) 29
- squad of detachment when
 incomplete.....4.
- Lift (blanket)-litter....107.
- (folded)-litter.....38.
- when in column of files...39
- when at-litter-posts...40.
- (open) litter.....48.
- Lift-patient, method of Pro-
 visional Manual.....51.
- method of author.....56.
- patient, 3 bearers.. 51, 66
- .. 2 bearers.... 113.
- .. 4 bearers..... 58.
- .. erect..... 63.
- .. No. 4 absent...81.
- .. exercises for one
 bearer..... 115.
- Litter—at, posts.....43.
- at (loaded ambulance).posts
 91.
- Regulation (Halstead)
 hand..... 16.
- (ambulance) Otis..... 16.
- Saterlee..... 16.
- English, Faris..... 16.
- .. O. P..... 16.
- ambulance, position of for
 loading ... 71.
- blanket, to prepare.. 104.
- folded, manual of with one
 bearer..... 22.
- folded, carried by Nos. 1
 and 4 when squad is in
 column of files, by No. 1
 at right shoulder in any
 other formation, except
 at-litter-posts..... 33.
- folded, to maneuver with
 33
- motions with, in file-on-
 litter..... 19.
- normal position of.... 22.
- open, to maneuver with
 42.
- position of, to load patient
 on to it.....50.
- (ambulance) position of,
 for loading.....71.
- position of, to unload at
 bed.....54.
- to bring from depot, for
 drill..... 19.
- slings..... 16.
- should not be carried on
 bearers shoulders.. 102.
- with No. 1, brought ver-
 tical if necessary when
 squads change direction
 33.
- Low-obstacle, prepare-to-
 lift-litter..... 98.
- Lower(folded)-litter—when
 in column of files....35.
- when at-litter-posts...36.
- when at fold-litter.... 37.
- from ambulance..... 75.
- litter-left (4 bearers)...57
- (loaded) litter (from am-
 bulance).....90
- open-litter.....49
- patient, 3 bearers.....52
- patient, one bearer....120
- .. 4 bearers.....59
- .. No. 1 absent.....81
- M**aneuvers with ambulance-
 wagon and litter.....71
- Manual of the folded-litter,
 with one bearer.....22
- Medicine-case men Nos 4..3

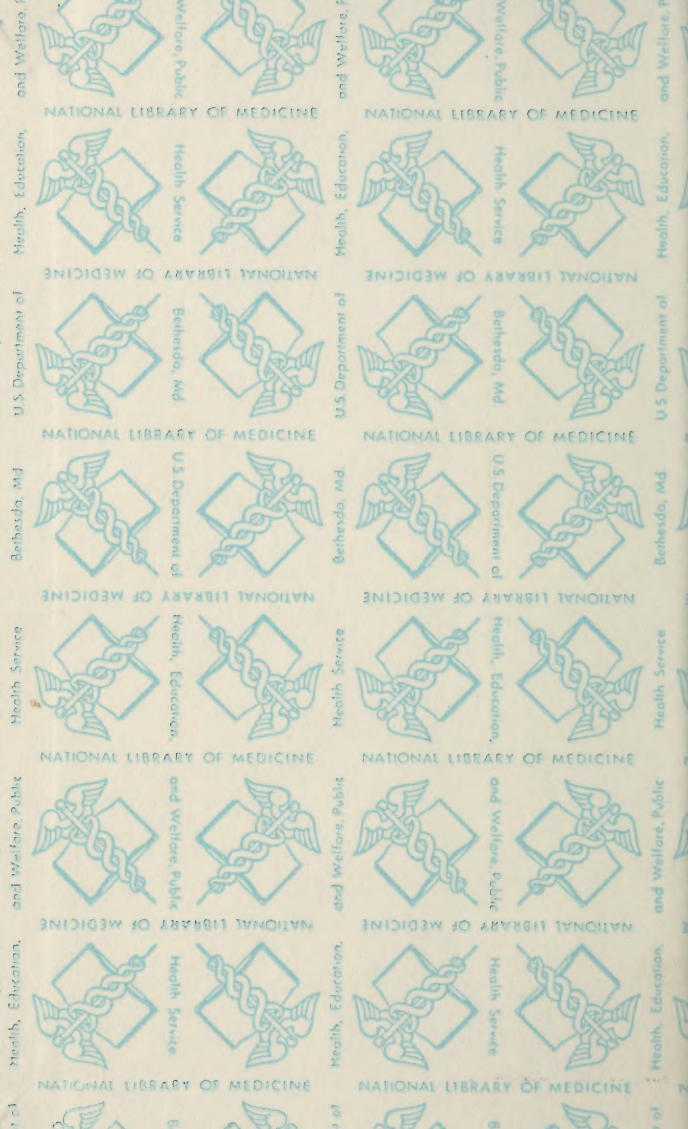
Medicine-cases, inspection of	12	Parade-rest, U. S. Inf. tactics	(par. 21)..... 18
repack.....	13	from order-litter.....	24
sling.....	14	Pass-in, to ambulance...	87
unsling.....	12	Pass-out, from ambulance	89
Method of lifting and lower-		Posts, Nos 1.....	21
ing patient with 3 bear-		of Hospital Stewards....	2
ers.....	50-55	Prepare—ambulance.....	73
with 4 bearers.....	56-67	to-ascend (stairs).....	100
Movements, rate of 120 paces		blanket-litter.....	104
to minute.....	17	coat-litter.....	109
of squads conducted in ac-		to-lift-(blanket)litter..	106
cordance with U. S. Inf.		to-lift-litter.....	47
tactics.....	7	“ 4 bearers....	61
		“ (ambulance)....	78
No. 1, acting instead of No.		to-lift-patient, from at-	
4 at (loaded) litter-posts		litter-posts.....	50
53		from squad-in-line.....	50
bearer with folded-litter	19	method of the Provisional	
bearer chief-of-squad	156	Manual.....	50, 81
No. 4, bearers in charge of pa-		left, or right, method of	
tient's arms, etc.....	52	the author....	56, 66, 82
bearer to act as ambulance		to-lift-patient, from litter	
driver.....	71	54	
Normal position of squad in		right or left, method of the	
movements with open-		author, 3 bearers....	66
litter.....	42	“ 2 bearers.....	112
Nos. 1, file-on-litter.....	19	to-load-ambulance, from	
front-march.....	41	at-litter-posts.....	84
posts.....	21	to-load-ambulance, squad	
Number squads.....	3	in position lower-pa-	
		tient, No 4 absent....	85
Observations on carrying		to-unload-ambulance..	88
loaded-litters.....	94		
Obstacle (low) march....	97	R anks—to open.....	5
Off-hand ways of carrying		to close.....	6
wounded.....	103	Raise-litter.....	86
Open-knapsacks and medi-		Rear-open-order, march,	
cine-cases.....	12	front.....	5
Open-litter from at-litter-		Repack-knapsacks (and	
posts.....	46	medicine-cases).....	13
from ambulance.....	77	Return-knives.....	11
Order-litter, from right-		swords.....	11
shoulder-litter.....	23	Right-shoulder-litter, from	
P ackets, inspection of... 15		order-litter.....	26

Right-shoulder-litter, from ground-litter.....	27	To bring litter to squad..	19
from left-shoulder-litter	28	carry loaded litter up stairs	99
from fold-litter.....	68	down stairs.....	101
from (ambulance) take- litter.....	68	To close-ranks.....	6
Right or left-open, or close- files-march.....	41	form the detachment....	3
S aterlee litter.....	16	load ambulance.....	80
Shoulder slings (litter)...	16	lift-patient into saddle	114
Sling knapsacks (and medi- cine-cases).....	14	lower-patient, 1 bearer	120
Squads—sets of 4's designat- ed as in bearer drill....	3	maneuver the detachment	7
Squads, designated as sets of fours in tactical move- ments.....	7	maneuver with folded-lit- ter.....	33
Stack-litters, from order-lit- ter.....	30	open-litter.....	42
Supernumeraries.....	4	number squads.....	3
Swords—draw (or knives)	9	open ranks.....	5
inspection of (or knives)	10	prepare and load ordinary wagons to transport wounded.....	121
return (or knives).....	11	transfer patient from litter to bed etc, 3 bearers	54, 55
T ake-litter, from ambulance	74	transfer patient from litter to bed etc, 4 bearers..	62
Take-litters from stack-lit- ters.....	32	U nsling-knapsacks.....	12
		W ith-folded-litter-form- rank.....	34











**Bridgeport
National
Bindery, Inc.**

MAR. 1983

"Bound to Last"

UH H698n 1889

62511000R



NLM 05099189 0

NATIONAL LIBRARY OF MEDICINE